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[FROM THE EDITOR

Was Lincoln a Spiritualist? Houdini Investigates

In 1989, long before the word *skepticism* entered my vocabulary, my parents took me to see David Copperfield perform at the Fabulous Fox Theater in St. Louis. His show offered a fusion of both live illusions and previously recorded video clips from his televised performances. I felt mesmerized—and baffled—while witnessing Copperfield fly through the air (in person) and transport himself, somehow, through the Great Wall of China (on video).

By the time *skepticism* did finally enter my vocabulary, and thanks to regular trips to Las Vegas for conferences, I began seeing performances of many of the world's other greatest magicians, including Penn & Teller, Piff the Magic Dragon, Criss Angel, Mat Franco, Justin Willman, and Michael Carbonaro. To this day, I continue to feel mesmerized—and baffled—during moments of every show, though by now I often have a good idea about the secrets behind most illusions. But like Penn & Teller on their show *Fool Us*, I still delight in the illusions I can't quite figure out.

CSICon 2024 offered me the first thrilling opportunity to see Banachek perform live in an enchanting evening in which the history of the modern skeptical movement came alive. In this issue of Skeptical Inquirer, I'll share some of my experiences at CSICon—including the Banachek performance—and you'll also get a chance to experience the conference through the all-seeing eyes of our other reporters: Carlos Orsi, Kat McLeod, Bertha Vazquez, Kenny Biddle, Susan Gerbic, and Adrienne Hill.

If, like me, you love magic, then you'll also enjoy this issue's cover story by historian Jason Emerson. Did you know Harry Houdini had a pet eagle named after Abraham Lincoln? I sure didn't! That fun fact tells me that Houdini (1874–1926) must have been quite the fan of President Lincoln (1809–1865), and, given that Houdini spent much of his life debunking Spiritualism, he surely felt rather dismayed by reports that his favorite world leader believed in spirit communication and participated in séances.

Perhaps the tarnishing of Lincoln's good name helped motivate Houdini to be involved in *Scientific American* magazine's prize of $2,500—announced in 1922—for the first person who could "produce a visible psychic manifestation" or provide a legitimate "psychic photograph," like the one he himself (illegitimately) produced of Lincoln's spirit. As readers of this magazine well know, the strategy of offering prizes for such extraordinary evidence has continued into this century through organizations such as the James Randi Educational Foundation, often under the direction of Banachek. More recently, the Center for Inquiry Investigations Group is now offering a prize of $500,000 for anyone who can demonstrate a paranormal ability under controlled conditions, and in this issue of SI, you can even read the latest special report from Jim Underdown about three recent attempts at taking home the prize. Can you predict the results?

—Stephen Hupp

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Our Vision: A world where people value evidence and critical thinking, where superstition and prejudice subside, and where science and compassion guide public policy.
Our Values: Integrity, Courage, Innovation, Empathy, Learning, and Wonder.

News Bites: From a Transgender Conversion Therapy Settlement to *The Onion*'s Attempt to Buy InfoWars

Stephen Hupp

Transgender Woman Awarded Settlement Due to Electroshock Treatment in China. On October 31, 2024, a Chinese court approved the compensation for a transgender woman (using the pseudonym Ling'er) following a hospital's use of electroshock therapy as a form of conversion therapy. Previously used for homosexuality, conversion therapies have long been identified as harmful. (For more, read "Transgender Woman Wins Record Payout in China after Electroshock Treatment" at theguardian.com.)

Richard Saunders Receives Lifetime Achievement Award. On November 23, 2024, Australian Skeptics gave a Lifetime Achievement Award to Richard Saunders, their chief investigator and host of the *Skeptic Zone* podcast. Among his many accomplishments, the Great Australian Psychic Prediction Project demonstrated that psychic predictions rarely come true. The award came in the form of a flying pig trophy presented during the 2024 SkeptiCon in Sydney, Australia. (For more, read "Lifetime Achievement Award to Richard Saunders" at skeptics.com.)

***Free Inquiry* Publishes First Issue with New Editor Ronald Lindsay.** On December 1, 2024, *Free Inquiry* magazine published the first issue under its new editor, Ronald Lindsay. With advanced degrees in both philosophy and law, Lindsay was previously the president and CEO of the Center for Inquiry (publisher of both *Free Inquiry* and Skeptical Inquirer). Prior to handing over the reins, Interim Editor Andrea Szalanski and Managing Editor Nicole Scott expertly maintained the magazine's role of promoting secular humanism in a thoughtful and engaging way. The cover story of Lindsay's first issue asks "Can America Survive as a Secular Democracy?" (For more, visit secularhumanism.org.)

German Skeptics Group Releases Annual Clairvoyant Forecast Check. On December 9, 2024, the German skeptics group GWUP shared a press release announcing the results of their yearly clairvoyant forecast check, concluding once again that the "predictions do not demonstrate prophetic abilities." One of the more amusing predictions involved a giant giraffe attacking a city. If you do see such an attack, please contact us immediately. (For more, read "Annual Psychic Forecasts Fail to Prove the Existence of Psychic Powers Once Again" at skepticalinquirer.org.)

Kreskin, Controversial CSICOP Conference Speaker, Dies at Eighty-Nine. George Joseph Kresge Jr., better known as The Amazing Kreskin, died on December 10, 2024. In addition to having his own TV series, *The Amazing World of Kreskin*, he also regularly appeared on popular late-night talk shows. Kreskin ignited controversy at his one appearance at the CSICOP conference (the predecessor to CSICon) by refusing to answer questions about what it really means to be a mentalist. (For more, see "Commentary: Hit and Run" and Paul Kurtz's "Response to the Shores" in the Fall 1991 issue of SI).

Judge Blocks the Sale after *The Onion* Wins Bid to Buy InfoWars. On December 10, 2024, a judge blocked the sale of Alex Jones's InfoWars to the satirical media company *The Onion*. Jones was required to sell InfoWars due to spreading vile conspiracy theories about the Sandy Hook elementary school shooting, with funds from the sale intended to go toward helping pay the $1.4 billion he owes for defamation. (For more, listen to the *Knowledge Fight* podcast and read "What Happens Next with Alex Jones' Infowars?" at apnews.com.) ■

Stephen Hupp is editor of Skeptical Inquirer.

A Magician Still

(To Mark Edward in Memoriam)

JOE NICKELL

Time
can prove unkind
        to all,
        but you'd still
daze
& amaze,
        confuse
        & amuse,
                & with a smile,
        with others, use
                mere
words—
that would
        cross in the air
like magic swords.
        Often-
                times we find
                you in our minds—
if vanishing then
soon
appearing again!

All photography by Karl Withakay.

We Saw the Brightest Stars Shine at CSICon 2024

STEPHEN HUPP

As advertised, the Committee for Skeptical Inquiry made it possible for us to see "the brightest stars of reason and science shine" at CSICon 2024 from October 24 through 27. For this issue of Skeptical Inquirer, we have a shining team of reporters covering everything from the Thursday workshops to the Sunday Papers. I'll get the reporting started, and then I'll turn you over to the rest of the team.

Opening Reception

I provided a few remarks at the opening reception on Thursday evening. My message was this: whatever your passions and skills may be, I hope this conference (and now this magazine issue) will inspire *you* to do all you can to help promote reason and science.

Next up at the reception, Center for Inquiry President and CEO Robyn Blumner took the stage and thanked CSI Executive Director Barry Karr for all his work toward organizing such a star-studded event, even going so far as to suggest we should change the name to BarryCon (though, I'd say KarrCon has its merits too). Blumner thanked several CFI staff by name, while also highlighting the nonprofit organization's many inspirational programs (see centerforinquiry.org/programs for more information). She also praised CFI's recent legal actions that have been tackling naturopathy, homeopathy, and a Louisiana law requiring schools to post the Ten Commandments. She closed by celebrating CFI's unique role as a "pro-science, anti-pseudoscience, consumer protection organization."

Eddie Tabash, chair of CFI's board of directors, wrapped up the reception by discussing the forthcoming presidential election (note: the opening reception took place on October 24, 2024). In a barnburner of a speech, Tabash argued that "the values of the Center for Inquiry are in especially acute danger because we attempt to focus on the full scope of what must be done to promote and preserve modern civilization." He added, "false claims and unsubstantiated conspiracy theories must never be permitted to trump reason and humanity's progress," and he closed by quoting a 1786 letter from James Madison to Thomas Jefferson in which Madison argued that their Statute for Establishing Religious Freedom should "extinguish forever the ambitious hope of making laws that shackle the human mind." According to Tabash, CSICon "represents one more step in furtherance of this ideal."

Brian Cox Receives the Richard Dawkins Award

Immediately following the opening reception, Neil deGrasse Tyson presented his fellow physicist Brian Cox with

SI Editor Stephen Hupp

CFI President and CEO Robyn E. Blumner

CFI Board Chair Eddie Tabash

Astrophysicist Neil deGrasse Tyson (left) and physicist Brian Cox (right)

the Richard Dawkins Award, given "to a distinguished individual from the worlds of science, scholarship, education, or entertainment, who publicly proclaims the values of secularism and rationalism, upholding scientific truth wherever it may lead." Cox has helped popularize science through shows, such as *Solar System* on the BBC, and books, such as *Black Holes: The Key to Understanding the Universe*.

Cox's keynote speech answered (and raised) many questions about the universe as he wowed the crowd with mind-blowing images of the universe, including one of a black hole from fifty-five million light years away. He even provided a two-minute "tutorial" on Albert Einstein's theory on general relativity, revealing he had "great confidence" in the ability of the CSICon audience to understand it. Here's a sampling of surprising facts that followed:

- The term *dark energy* represents the unknown force that is causing an acceleration of the expansion of the universe.
- There are about two trillion galaxies in the currently observable universe (and more beyond).
- The universe is nearly fourteen billion years old.
- Light has been traveling from the most distant objects we can see for more than thirteen billion years to reach the Earth.
- Black holes trap light and affect the spacetime continuum.
- The term *event horizon* represents "a place in space where time stops" from the frame of reference of a distant observer.
- Going beyond the event horizon leads to the *singularity*, a term that can represent the "end of time."

In communicating these ideas, Cox often referred to the Penrose diagram, a graph of the spacetime continuum. He further explained more topics, such as Hawking radiation, black hole entropy, worldlines, and wormholes. He closed with these words: "We are for the first time, I would say in theoretical physics, beginning to take the first steps toward a deeper understanding of space and time."

Neil deGrasse Tyson: More Cosmic Perspectives on Civilization

The entertainment for the next evening came in the form of a standup comedy routine by Neil deGrasse Tyson. Before launching into hilarious musings from his book *Cosmic Perspectives*, he opened by sharing, "This movement, [the] skeptics movement, is something I deeply cherish," also adding, "I'm a big supporter of this movement." He then recounted some specific episodes from his life, including being rejected for jury duty on multiple occasions due to both his celebrity status as well as his overt skepticism about the validity of eyewitness testimony. He also mused over a UFO whistleblower's term *non-human biologics* by indicating the term actually applies to every living thing on Earth—including tree bark—except humans. Tyson then revealed he has a "File of Forbidden Tweets," containing Tweets he wrote but never sent. The forbidden Tweet he shared with us was prompted by Ben & Jerry's decision to remove all traces of glyphosate from their ice cream. Here's the never sent Tweet: "You would need to consume 400 million pints of Ben & Jerry's ice cream for its trace amount of glyphosate to kill you, but after only 20 pints you'll die from its sugar content."

Toward the end of his presentation, Tyson shifted to the more serious topic of race in America by sharing a racist quote made by science fiction writer H.G. Wells from his book in 1901. Among other incendiary comments, Wells wrote that the "inferior races"—referring to Black, Asian, Latino, and Jewish people—should "die out and disappear." Tyson used the quote to help demonstrate the progress America has made over the past century, even if we still have some ways to go in furtherance of reaching our highest aspirations. Tyson reflected on the fact that he received "the talk" at age nine about how to act around police officers to avoid being unjustly shot. The fact that George Floyd's 2020 murder by a police officer made the national news, Tyson reasoned, was a sign of progress (even if the murder itself was not). Further evidence of progress was the subsequent removal of statues, such as that of Confederate General Robert E. Lee. Overall, Tyson approached these issues in a relatable and engaging way.

Daniel Simons: Out of Focus

Like the conference headliners, cognitive psychologist Daniel Simons was invited to give a rare hour-long presentation. You might not know Simons by name, but there's a good chance you've heard about his work. Before you read any further, I'd encourage you to watch

Psychologist Daniel Simons

his YouTube video titled "The Monkey Business Illusion" (it's less than two minutes long). A similar video served as the basis for the classic "invisible gorilla" study that Simons conducted with co-author Christopher Chabris. Much of the presentation discussed the "focused attention tasks" that they describe in their book *The Invisible Gorilla: How Our Intuition Deceives Us*. I don't want to spoil any of their specific secrets just now, but the take home point is that we humans are pretty bad at noticing environmental changes unless we are directly looking for them.

The latest book by Simons and Chabris, *Nobody's Fool*, explores the reasons we can all—even skeptics—be deceived by others. "I've talked to more than one magician who has said that audiences of skeptics are the easiest to fool," warned Simons to our chuckling audience. Why? Magicians like to give subtle false hints about how their tricks work, and skeptics are quick to pick up on these cues without realizing that those hints are meant to fool us (this has certainly happened to me during magic shows). Simons then detailed several high-profile examples of fraud in business, finance, art, and even science. In all cases, the scammers used the constraints of people's attentional abilities against them. His solution: learn commonalities across scams and "think like a scammer," especially when you have a lot to lose.

The Skeptics' Guide to the Universe Podcast: Live Taping

Immediately following the Simons presentation, *The Skeptics' Guide to the Universe* (*SGU*) podcast crew conducted a live taping of the show. If you weren't at CSICon 2024, you can listen to *SGU* episode #1012 to hear most of what you missed. All the hosts were present—Steven Novella, Bob Novella, Jay Novella, Cara Santa Maria, and Evan Bernstein—and they were joined by special guest and theoretical physicist Brian Wecht. Typical to the show's format, they each led a discussion on a different topic.

- Bob began by describing a newly discovered (and relatively small) black hole that is providing useful information due to its somewhat close proximity to Earth.
- Cara summarized Daryl Chubin's editorial on Retraction Watch aimed at promoting better science practices such as study pre-registration and increased incentives for article reviewers.
- Steve discussed new advancements and challenges with using CRISPR (clustered regularly interspaced short palindromic repeats) to genetically modify the brain.
- Brian shared some implications of the newly discovered largest prime number (and in case you were wondering, the number is: $2^{136,279,841}-1$).
- Evan revealed the latest dubious—but patented—sticker-adorned amulet with marketing promises such as "enhancing the body's natural electromagnetic fields."
- Jay critiqued news organizations for hyping claims such as "Scientists Warn of Imminent Collapse of Key Atlantic Ocean Currents." The take-home message was that this is a real issue worthy of concern but that news organizations are exaggerating the "imminence" aspect to get more clicks.

As always, the episode ended with Steve leading the jovial game Science or Fiction, and the audience was able to play along. Finally, if you listen to this episode of the *SGU* podcast, you'll also

The Skeptics' Guide to the Universe live podcast. From left to right: Cara Santa Maria, Evan Bernstein, Steven Novella, Jay Novella, Bob Novella, and Brian Wecht

enjoy an interview with Andrea Love (SI's new columnist!), but that interview was not part of the live taping.

Banachek's Las Vegas Show: Mind Games

If you haven't heard Banachek's story yet, a great place to start is season 3 of the *World's Greatest Con* podcast. In short, he's a living legend who, as a teenager in the 1970s, connected with James Randi and ultimately fooled researchers at Washington University in St. Louis, Missouri (my hometown), into believing he had paranormal abilities, including spoon bending. "Project Alpha" continued until 1983, when Randi, Banachek, and another young man, Mike Edwards, revealed they were purposefully cheating. Thus, seeing Banachek perform live all these decades later was quite a thrill.

Days before his Saturday evening show, Banachek conducted a Thursday morning workshop called "The Art of Memory," aimed at giving the audience tools for improving their memory. I know enough about mentalism to believe that a good memory goes a long way toward helping the mentalist appear to have paranormal abilities, and from a skeptical point of view Banachek's show is particularly refreshing because of the words appearing on the screen before every show: "Banachek will use his five senses to duplicate the illusion of a sixth sense to simulate what psychic powers would look like." During his performance, the same show he just wrapped after years of performing at the Stratosphere, he definitely appeared to have paranormal powers. The frequent audience gasps were a sign that many in the skeptical crowd were bewildered by how he could read minds so well. The highlight for me was seeing his fork-bending act, a callback to his origin story and a welcome reminder of the amazing legacy of James Randi.

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I must add that Jim Underdown superbly emceed CSICon 2024, often sharing anecdotes from the CFI Investigations Group that he's spearheaded for twenty-five years (see his latest report in this issue). Nobody has yet won the $500,000 prize, but if they ever do, you'll be reading about it here, folks. On the other hand, two prizes—both large buckets of CSI swag and signed books from the conference presenters—were raffled off and awarded at the end of the day on Saturday. The prize packages even included free tickets to the next CSICon, a celebration of CSI's fiftieth anniversary that will take place June 11–14, 2026, in Buffalo, New York (there won't be a CSICon in 2025). I can't help but include the photo of Debbie Allen, CFI's director of development, after she pulled my wife, Farrah Hupp, on stage to pick out the two winning raffle tickets. Debbie Allen is just one of the many astounding CFI staff members who work behind the scenes at CSICon to help make the event a fantastic experience. Last, I'd like to thank Karl Withakay for taking all the photos you'll see in this section of the issue.

Okay, it's time for me to take a break from reporting, but I'll be back in a few pages with coverage of presentations by Jerry Coyne and Steven Novella. Is biological sex binary or multifactorial? Coyne and Novella have different answers worth considering. Until then, enjoy the other reports from my favorite conference of the year! ■

Stephen Hupp is editor of Skeptical Inquirer.

CSICon emcee Jim Underdown

CFI Development Director Debbie Allen (left) and Farrah Hupp (right)

Malorie Mackie (from audience) and mentalist Banacheck (right)

Photographer Karl Withakay

Meeting of the Lilienfeld Alliance at CSICon: The First LiliCon

CARLOS ORSI

"Teaching is essential for the promotion of critical thinking, and as university professors, teaching is at the core of what we do." With these words, microbiologist Natalia Pasternak, professor of Science and Policy at Columbia University and a CSI fellow, opened the first session of the first LiliCon, the meeting of the Lilienfeld Alliance for the Teaching of Rational Skepticism in Higher Education, which took place during CSICon 2024.

The meeting brought together about twenty scholars from various parts of the world, including Brazil, Britain, Canada, South Africa, and the United States, who presented projects, courses, and empirical studies related to the teaching of skeptical rationalism.

There were presentations about some of the classics in the field, such as the famous course on "Ignorance" offered by neuroscientist Stuart Firestein at Columbia and the basis for Firestein's book of the same name, and British psychologist Chris French's "Psychology, Parapsychology, and Pseudoscience." French, who is also a CSI fellow, established the Anomalistic Psychology Research Unit of Goldsmiths College, University of London, in 2000 and has recently published a book about skepticism and paranormality, *The Science of Weird Shit*.

Skeptical Courses and Investigations

The presentations were divided in three sections: Established Courses (in which both Firestein and French talked about their work), Empirical Investigations, and Courses Enriched by Rational Skepticism. A poster session also included themes such as "Integrating Science in Legal Education" (by Brazilian researcher Paulo Almeida, from Instituto Questão de Ciência) and "Exploring the Link Between Metacognition, Open-Minded Thinking, and Belief in Misinformation" (by Dawson VonStein, from MacEwan University, Canada).

During the Empirical Investigations section, professor of psychology Anthony Bishara from the College of Charleston presented research that tried to answer the following question: Does an education in scientific skepticism help people really separate true beliefs from false ones, or does it just make people more cynical? In other words, are college courses about science and pseudoscience creating critical thinkers—or just nihilists?

Bishara described an experiment, comparing the attitudes of psychology students before and after a skepticism course (based on materials from skeptical magazines and authors), that showed that a skeptical education does both; it enhances the capacity to separate sense from nonsense and makes the acceptance of new beliefs, even true ones, harder—but the first effect is larger than the second.

Bishara's, Firestein's, and French's were just three among fifteen presentations that took place during the early afternoon. Others included:

- Taner Edis from Truman State University on the use of "weird science" (e.g., Bigfoot, aliens, ghosts) in what he defined as "indirect philosophy of science" classes
- Kevin Folta from the University of Florida on how anti-science prejudices hinder potentially beneficial uses of biotechnology
- Christina Macias from Fresno State University on the prevalence of false beliefs about children and families in college students
- Jacques Rousseau from the University of Cape Town (South Africa) on the use of artificial intelligence by undergraduates
- Leonardo Costa from the Instituto de Práticas Baseadas em Evidências (Institute for Evidence-Based Practices in Brazil) on the teaching of clinical research methods
- Dean McKay from Fordham University on his college course about disgust
- Bill London from California State University Los Angeles on promoting skepticism in a Consumer Health class
- Guilherme Guzzo, from the Universidade Caxias do Sul (Brazil) on the use of myths about animals to teach students to do proper research and arrive at evidence-based conclusions
- John Pfister from Dartmouth College on the advantages of using Skeptical Inquirer magazine issues as prompts for students in his course on writing

The Alliance

An initiative to bring together professors of skepticism and rational thinking from all over the world to share experiences, teaching techniques, and research, the Lilienfeld Alliance is the brainchild of social scientist Katie Dyer and physicist Ray Hall, both from Fresno State University; Nata-

From left to right: Katie Dyer, Andrea Roach, Christy Macias, Jacques Rousseau, Ray Hall, John Pfister, Dean McKay, Natalia Pasternak, Anthony Bishara, William London, Leo Costa, Taner Edis, Stuart Firestein, Guilherme Guzzo, Chris French, Kevin Folta, and Rodney Schmaltz

lia Pasternak (mentioned above); and psychologist Rodney Schmaltz from MacEwan University (Canada). Hall, also a CSI fellow, was the longtime organizer of the Sunday Papers session at CSICon and The Amazing Meeting.

The Alliance name is a tribute to psychologist Scott O. Lilienfeld, who passed in 2020. Lilienfeld led a highly respected and productive career in psychology research, teaching, and outreach; always promoted rational thinking and skepticism; and always demanded the proper scientific evaluation of psychotherapeutic doctrines and psychological theoretical proposals. Books he cowrote or coedited, such as *50 Great Myths of Popular Psychology* and *Science and Pseudoscience in Clinical Psychology*, became classics.

In his opening remarks for LiliCon, Schmaltz remembered Lilienfeld's deep commitment not only to skepticism and rationalism but also to intellectual humility. At the end of this first LiliCon, it was announced that the second LiliCon will take place at MacEwan University in Edmonton, Alberta, Canada, in summer 2025. More can be found at https://sites.google.com/view/lilienfeldalliance/. ■

Carlos Orsi is a journalist and science writer who also writes mystery and science fiction.

Misinformation Fuels a Sick Fascination with Wellness

KAT MCLEOD

The health and wellness industry is big business—massive, in fact—and is rife with misinformation and pseudoscience. Three presenters covered this topic and then later sat together for a broader discussion as a panel.

Timothy Caufield: The New Wellness BS? Manly Woo

Timothy Caufield, professor of law and public health, took us deep into the darkness of the manosphere where manly men prove their manliness by bulking up their bodies, eating raw meat, slapping their testicles, and even drinking their own urine to combat the attack on masculinity. The manosphere has testosterone turned up to eleven, and they want men to consume their products and adopt the manly lifestyle to avoid being seen as effeminate. This trend is so rampant that the misinformation about men's health is lowering their life expectancy (Sforza 2023). The deception bleeds into all aspects of life causing a decline in trust in science that results in higher rates of climate change denial, more vaccine hesitancy, and even an increase in feelings of disenfranchisement.

The manosphere doesn't make men or society better but instead leads to fear mongering echo chambers. Fear of being labeled as weak, unmasculine or as a "soy boy beta cuck" (to quote Caulfield) may result in men choosing to eat a less healthy diet. Men trapped in the manosphere are also less likely to get quality sleep, get help from doctors, and use preventative methods (e.g., seatbelts or birth control). They are more likely to exhibit risky behaviors, have mental health issues, feel lonely, have poorer relationships, have worse sex, and exhibit increased violence toward their partners. Men are facing the same issue women have for years, where industries manufacture insecurities so that they can sell the cures for the ails they amplified in the first place. For more on the manosphere, watch Caulfield's new documentary *Harder Better Faster Stronger*.

Rina Raphael: The Media's Role in Health Misinformation

Journalist Rina Raphael imparted wisdom from her work, including her book *The Gospel of Wellness*, where she unveiled the public's lack of confidence in journalists combined with low-quality studies (often completed more for a catchy press

release than for any genuine research purposes). Many studies are published in journals funded by the wellness industry. Wellness has replaced fashion as a hot topic in journalism and is seen as a status symbol or a lifestyle, creating new trends and fads. Fake science and jargon get clicks and sell products, so much so that wellness has become the single most consumed content.

We learned that 40 percent of university health/medical press releases contain exaggerated health advice and 33 percent exaggerated inference to humans based on animal research (81 percent of news stories contained similar exaggeration) (Sumner et al. 2014). Because many science journalists are burnt out and leaving the profession, those left to report on issues often lack the background and access to experts to verify claims, leaving questionable claims unchecked. It's difficult for news consumers to discern fact from fiction with rampant misleading headlines and buried facts. There are no truly reliable outlets for consumers when even the Mayo Clinic and the World Health Organization include alternative medicine in their lists of treatments.

Nick Tiller: The Role of Bad Science in Spreading Misinformation

Exercise scientist Nick Tiller drove home the seriousness of the misinformation issue by showing that in 2022 the health and wellness economy was worth $5.6 trillion—more than social media, fast food, and phones *combined.* He stressed that it was easy for consumers to fall for misinformation because we are "using analog problem solving in a digital age." Science is being skewed with click-bait headlines on dubious science topics that grab attention away from the good science that doesn't tend to get presented in a flashy manner. Consumers are bombarded with myths, misinformation, and pseudoscience.

Celebrity "experts" propagate false research results, share bad or cherry-picked data that have unrealistic results, and even invent their own (ineffective) products. It has become a "marketing-first" approach to get media attention at the expense of good science, and even retracted articles continue to get traffic. Tiller provided advice on how scientists can counteract bad science by using newer approaches such as preregistering research studies. He argued that it's time for journals to start paying experts for their time to complete detailed peer reviews of studies. There needs to be a switch in thinking away from quantity of papers published toward quality.

Wellness panel discussion with, from left to right, Timothy Caulfield, Rina Raphael, and Nick Tiller

Panel Discussion: Longevity Lies and the Fountain of Youth

Together, these same three presenters spoke on a panel about the wellness industry, dieting, fasting, and the complexities of metabolism. They agreed that *wellness* is a vague term used to encompass everything from actual health advice to biohacking supplements selling empty promises that promote anti-aging with claims to help people look better and live longer. There is an element of *science-ploitation* wherein the wellness industry leans on budding scientific research and science language to confuse consumers when there is little or nothing to back up their claims. And many of the claims are intentionally so ambiguous they cannot be tested.

The panel had a great conversation about the difference between health span (aging well) and life span (length of life), indicating that longevity was a good combination of both. Tiller shared the harsh truth that some extreme athletes (e.g., triathletes) often know that their excessive exercise can result in poor longevity (due to strain on their cardiac health), but knowing the negative effects is not enough to make the athletes stop. Even the healthiest people (e.g., former Olympians) only added an average of four to five years of longevity, and so it is unrealistic to expect the average person to have better results than them when trying to prolong their life. There is no magic pill that will help you live a much better and longer life. Much of health is determined by genes, socioeconomic background, and a lot of luck.

The takeaways were: don't obsess about health, don't fetishize your health, don't listen to celebrities (or "experts" who are speaking outside their area of expertise), and don't engage in dieting. No fad diet has ever been shown to be sustainable for five years or longer. Instead, move your body, optimize sleep, cultivate a community to stave off loneliness, be mindful, use sensible preventative strategies (e.g., helmets, seatbelts, vaccines), avoid too much alcohol, don't smoke, and don't neglect your mental health. The best time to start was fifteen years ago, but the next best time is today. ■

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Kat McLeod hails from Edmonton, Alberta, Canada. When not working her day job at the University of Alberta, she contributes to the *Skeptic Zone* podcast.

Real World Harms from Pseudoscience and Science Denial

BERTHA VAZQUEZ

Many of my fellow conference attendees mentioned that this was the best CSICon lineup ever. What certainly came across loud and clear was the knowledge and passion of the speakers. From Natalia Pasternak's rallying cry to protect women and children in Brazil to Forrest Valkai's rousing monologue about finding meaning through science and nature, we saw inspiring examples of how effective science communication can break through the airwaves. Kevin Folta and Michael Mann demonstrated how science already has the tools to chart the course to a better future—if we only could see through the misinformation and demand action.

Natalia Pasternak: Harm from Family Constellation Therapy

Natalia Pasternak, a professor of science communication and policy at Columbia University, gave a passionate presentation that became one of the most talked about at the conference. Titled "Quantum Misogyny," it was a powerful indictment of a dangerous practice known as Family Constellation Therapy (FCT). Founded and trademarked by a former priest, Bert Hellinger, FCT is rooted in traditional, patriarchal values and can perpetuate harmful stereotypes and victim-blaming. You could feel the anger in the ballroom when Pasternak said the victims of abuse, including sexual and child abuse, are forced to apologize to their abusers. That anger was followed with disbelief when she explained that the aim of this so-called therapy was to "resolve" issues through a process that involves physical touch and belief in a mystical energy transfer. The therapy includes reenactments of the abuse using volunteers, toys, or—wait for it—even horses(!). Pasternak shared the tragic case of a woman who was stripped of custody after reporting her husband's abuse of their daughter. The therapist and the court, influenced by the therapy approach, deemed her claims false. The therapy's acceptance in Brazilian courts has led to underreported domestic violence cases, because victims fear the potential consequences of seeking justice.

Pasternak concluded her talk by describing her efforts to combat FCT. Her nonprofit, Instituto Questão de Ciência (IQC; Question of Science Institute), has been instrumental in exposing the dangers of this practice and advocating for victims of abuse, and her book on pseudoscience, *What Nonsense!* (not currently available in English), with coauthor Carlos Orsi, has become a bestseller in Brazil.

Forrest Valkai: Creationism and Challenging Science Denial

Forrest Valkai, a well-known science communicator, provides an engaging approach to debunking pseudoscience. On his YouTube channel, *Reacțeria*, he dissects videos created by people promoting creationism and others engaging in science denial, exposing their flawed logic and misinformation. In one episode, Valkai analyzes a PragerU video

Science communicator Natalia Pasternak

Science communicator Forrest Valkai

Professor of horticultural sciences Kevin Folta

Climatologist and geophysicist Michael Mann

filled with misconceptions about evolution. He addresses common fallacies, such as the idea that evolution is a linear progression toward perfection or that the fossil record lacks transitional forms.

Valkai offered tips for challenging science denial, such as correcting misconceptions without getting derailed by dogmatic arguments. He also stressed the importance of inspiring audiences with the wonder and beauty of the natural world, demonstrating how evolution can explain the diversity and complexity of life on Earth. His closing statement was an awe-filled soliloquy about science and secularism.

Kevin Folta: Missing Out on Lifesaving Genetic Technologies

Kevin Folta, a professor of horticultural sciences at the University of Florida, recalled being captivated by the potential of genetic engineering as a young boy, checking out his first book on genetic engineering from the library at the age of ten. Folta clearly loves his work; he began his talk by citing examples of how genetic engineering has improved our lives, such as with the production of human insulin and the speedy development of the COVID-19 vaccine after the coronavirus's genetic sequence was discovered. He then discussed how, sadly, other promising innovations have been hindered by public fear and misinformation. For example, genetically modified chickens that are resistant to swine flu, hornless cattle, and golden rice (fortified rice that can combat malnutrition) have all faced significant opposition from anti-GMO groups such as Greenpeace.

Folta emphasized the importance of effective communication between scientists and the public. Scientists have a real opportunity to ease public fears about genetic engineering by building trust and tackling concerns head-on. It's important for them to engage with people genuinely, both online and offline. By actively participating in social media and really listening to what the public has to say, they can create empathy and connect better with society. Folta concluded by urging the audience to amplify the work of scientists and challenge the misinformation spread by those who have actively discouraged the use of lifesaving genetic technologies.

Michael Mann: Minimizing Harms from Climate Change

Michael Mann, a climatologist and geophysicist at the University of Pennsylvania, began his essential presentation on climate change by underscoring a crucial point: meaningful climate action hinges on a functioning democracy. To engage the audience, he played "Walking in Your Footsteps" by Sting, a poignant reflection on how the dinosaurs, once seemingly immortal, faced extinction sixty-six million years ago due to an asteroid impact. Mann explained that it wasn't the impact itself that caused the demise of the non-avian dinosaurs but rather the subsequent changes to the climate, a rapid cooling event reminiscent of a nuclear winter. A key difference between their mass extinction and our current climate crisis is that, unlike the dinosaurs, we possess the agency to address climate change directly.

Mann noted that a warming event fifty-six million years ago raised Earth's temperatures by about 5°C over 10,000 to 20,000 years, while today's changes are occurring at an alarming pace within just 100 to 150 years. This rapid transformation poses several challenges, and many species will not be able to adapt quickly enough. He referenced a prediction from ExxonMobil in 1982, which accurately described our present climate trajectory. According to Mann, Exxon did not use this data to find proactive solutions but rather launched a decades-long disinformation campaign. Mann emphasized the urgency of our predicament, likening it to navigating a treacherous ski slope in which aiming for a maximum increase of 1.5°C is critical to avert widespread disaster. If we act decisively, we may be able to limit warming to 2°C instead of the projected 4°C.

For more on climate change, see the previous issue of Skeptical Inquirer (with Guest Editor Bill Nye) and Michael Mann's new book (coauthored with Peter Hotez), *Science under Siege: How to Fight the Five Most Powerful Forces That Threaten Our World*. ■

Bertha Vazquez is CFI's director of education and the director of the Teacher Institute for Evolutionary Science (TIES).

Changing Minds through Critical Thinking

KENNY BIDDLE

CSICon 2024 has come and gone, and what a ride! In addition to reuniting with old friends, meeting new friends in person for the first time, and hosting an interactive workshop (with Richard Saunders) that kicked off the conference, it was the speakers that really made the conference something special for me. And we had a great lineup!

Philosophy of Science professor Massimo Pigliucci

Founder of Thinking Is Power, Melanie Trecek-King

Massimo Pigliucci: The Nature of Pseudoscience, How to Fight It, and Why It Matters

My first assignment was Massimo Pigliucci, a philosophy professor at City College of New York. Pigiliucci's presentation began with a condensed history of skepticism, from Marcus Tullius Cicero and Brandolini to cognitive biases and logical fallacies. After the history, he dove into what works—and what doesn't—in our fight against pseudoscience and the "bullshitters" who are in it for personal gain.

One point that stood out for me was the suggestion of engaging in the Socratic method. Pigliucci said, "If you read any of the Socratic dialogs, what you'll see is that Socrates just asked questions. And the point of asking these questions was to literally generate confusion in the other person." However, this is not a method meant to *leave* someone confused. Rather, "the beginning of wisdom is when people are less certain of what they believe," causing them to take a closer look at what—and *why*—they believe. This has been my method of choice for some time: asking questions of believers of pseudoscience with the hope of causing them to take a second, often deeper, look at their beliefs from a new perspective.

Melanie Trecek-King: Why Do We Fall for Misinformation?

Immediately following Pigliucci was my colleague and good friend Melanie Trecek-King, an associate professor of biology at Massasoit Community College, founder of Thinking Is Power, and the education director for the Mental Immunity Project and CIRCE (Cognitive Immunology Research Collaborative). She's also enthusiastic about recreating paranormal videos every time she comes to visit me (we have a lot of fun).

Her talk focused generally on how misinformation works and specifically on understanding our own vulnerabilities so

that we can avoid falling for misinformation. Using the concept of the Elephant and the Rider (developed by Psychologist Jonathan Haidt), Trecek-King broke down several behaviors that often lead us to accept misinformation: polarization, trust, intuitive thinking, motivated reasoning, repetition, confirmation bias, and emotions. Trecek-King went on to provide multiple examples that drove the point home. I highly suggest you attend one of her presentations if you are ever provided the opportunity (just don't ask her any questions related to *Star Wars*).

David McRaney: How Minds Change

My next assignment was David McRaney, a science journalist, blogger, author, editor, photographer, voiceover artist, and television host—wow, this guy does it all! I know him as the host of the popular podcast *You Are Not So Smart*, in which he covers topics such as cognitive biases, logical fallacies, human perception, motivation, and behavior. It's a wonderful and educational podcast.

McRaney's talk focused on *naive realism*—the intuition that you see the world as it truly is, free from biases or the limitations of your senses. McRaney demonstrated that we live in a subjective reality by discussing one of the most viral examples of content on social media—The Dress. You know the one, the blue/black or white/gold infamous dress, which, when polled, the audience splits 50/50 on what colors they see. He went on to explain exactly why we, the audience, see the dress differently. This led to another example (which became a full-fledged experiment) centering on what he called a "perfectly perceptually ambiguous color object," which turned out to be a Croc (the foam resin shoe). I won't give away the details, but the experiment provided an amazing insight into our visual perception of the world around us.

Bertha Vazquez: Do We Teach Critical Thinking in Schools?

My final assignment was covering Bertha Vazquez, the education director for the Center for Inquiry (CFI). She runs several CFI projects, including the very successful Teacher Institute for Evolutionary Science (TIES), Generation Skeptics, and ScienceSaves. In December 2021, Vazquez published a book, along with fifteen fellow TIES presenters, titled *On Teaching Evolution*.

Science journalist David McRaney

CFI Education Director Bertha Vazquez

Part of Vazquez's presentation was born from a discussion she had with an earlier speaker I covered, Melanie Trecek-King, on whether critical thinking is taught in schools prior to college. Vazquez listed several key points, polling the audience on whether a few examples qualified as elements of critical thinking. These points included asking questions (for science) and defining problems (for engineering); developing and using models; planning and carrying out investigations; analyzing and interpreting data; using mathematics and computational thinking, constructing explanations (for science), and designing solutions (for engineering); engaging in argument from evidence; and obtaining, evaluating, and communicating information (Science and Engineering Practices in the Next Generation Science Standards). Vazquez also touched on the amazing work she's been doing with Generation Skeptics and ScienceSaves, definitely two programs I highly recommend you check out.

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So, this wraps up my very brief coverage of just a few of the CSICon speakers. The presentations were much more involved and educational than I can relate in this short space, so I hope my teasers are enough to interest you, causing you to seek out more information from these four amazing science communicators. I guarantee it's well worth your time. Never stop learning. ■

Kenny Biddle is the chief investigator of the Committee for Skeptical Inquiry.

International Investigations into Psychic Claims

SUSAN GERBIC

In the Spring 1978 issue of Skeptical Inquirer, James Randi wrote a Special Report, "Tests and Investigations of Three 'Psychics.'" And here we are, nearly half a century later, with zero evidence of any psychic powers. Some might argue we have made little progress eroding the public's trust in psychics, and certainly we have had little impact on their ability to make money. Yet we have no alternative; how much worse would it be if we didn't try? In two separate talks, longtime paranormal investigators Chris French and Richard Saunders shared stories about their long history of investigating psychics.

Chris French: Testing Claims

With his new book, *The Science of Weird Shit*, having just been published, it was wonderful to see Chris French at CSICon 2024. His presentation was a series of stories in his long history of investigating the paranormal. My favorite story involved the testing of Derek Ogilvie, the mind reader for babies (I kid you not). For the investigation, Ogilvie was presented with six youngsters under thirty months old (with an adult nonparent present) and gave them "readings." Then the parents were given the six written readings and prompted to determine which reading was for their child. If Ogilvie passed with four correct, he would have moved on to James Randi's One Million Dollar Paranormal Challenge. Ogilvie failed.

French's other stories included that of Aurel Raileanu, the man who could make metal stick to his chest—as long as his chest was shaved, he was sweaty, and he could lean backward! Once they added a tissue to his skin, the metal wouldn't stick, though magnetism should have been nearly as effective. French also profiled Chris Robinson, the "Dream Detective," who claimed to be able to see specific places and situations in his dreams. French and his team devised a strict protocol to test his dream claims, which also failed to live up to the hype.

Anomalistic psychologist Chris French (left) and Australian Skeptics Chief Investigator Richard Saunders

Richard Saunders: Psychic Detectives

When Richard Saunders comes all the way from Australia, Barry Karr knows to put him to work (see also Adrienne Hill's reporting in this issue about Saunders's Thursday morning workshop, "Tricks of the Tricksters"). On Friday, Saunders's talk was about psychic detectives in Australia. He focused on the role of the media in making the psychic appear to be accurate when of course there is no evidence any psychic has solved a crime. Are psychics called in by the police? Yes, Saunders says, possibly pushed by the family or a need to boost publicity of the case.

Saunders asked how we in the skeptical community can help and suggested that we emphasize critical thinking to the public. Saunders says the idea of "let's get people in and find your child" is intuitively appealing, but it isn't likely to help if you use psychics. Psychics waste time, eat up valuable resources, and give false hope. He gave famous Australian examples such as the Beaumont children (still missing since 1966) and Ann Ann, a psychic who often appeared in women's magazines.

Guerrilla Skepticism

Once again, CSI gave me the honor of having a table in the bookstore room, and my team covered the table with swag supporting start-up skeptical groups across the United States. We introduced attendees to in-person events that will be held as mini grassroot conferences called SkeptiCamps. At the table, we also promoted my team's work with the important Guerrilla Skepticism on Wikipedia (GSoW) project as well as the investigations done on psychic mediums (more accurately called "grief vampires").

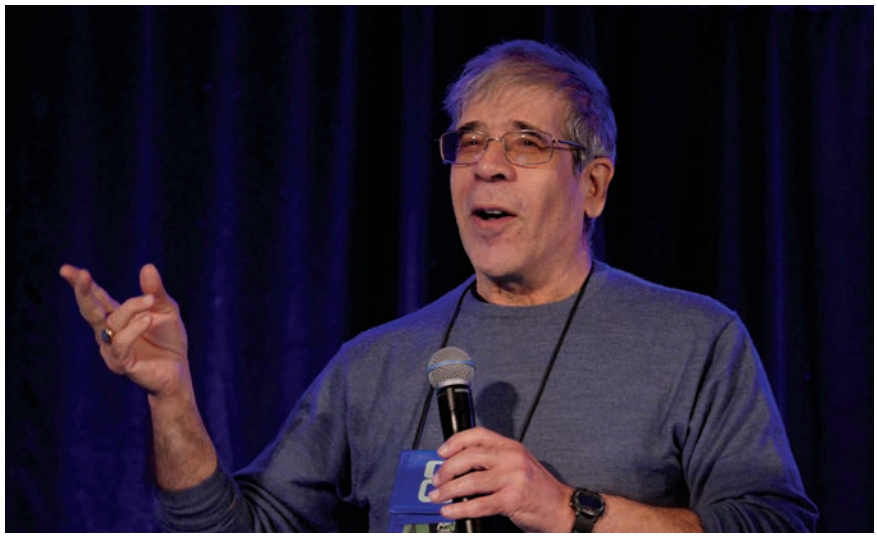
Relatedly, on Friday night I attended an event at a nearby casino by Matt Fraser, who claims to be "America's top psychic medium." Unlike some of our psychic stings, I attended this event as myself to knock him off his game. I had a conversation with him before his show. Sadly, I chose that event over attending Neil deGrasse Tyson's keynote CSICon presentation, but someone has to bear witness to what the so-called psychic mediums are up to. I'm sure Neil will forgive me. ■

Susan Gerbic is the cofounder of Monterey County Skeptics and founder of the Guerrilla Skepticism on Wikipedia (GSoW) project and a fellow of CSI.

Is Biological Sex Binary or Multifactorial?

STEPHEN HUPP

A pair of talks about biological sex provided plenty of content for discussion—sometimes heated—during CSICon 2024. For this report, I'll stick to the "two paragraphs per talk" limit I set for all the CSICon reporters, although to help me get through this nuanced topic I'll cheat a little by first providing a brief description of the article that set the stage for the controversy at the center of the presentations and add a brief summary of the opening comments during the live podcast taping of the *Skeptics' Guide to the Universe* (*SGU*; Novella 2024).



Evolutionary biologist Jerry Coyne

Jerry Coyne and Luana Maroja: 'The Ideological Subversion of Biology'

In the September/October 2023 issue of Skeptical Inquirer, Jerry Coyne and Luana Maroja, both evolutionary biologists, published an article titled "The Ideological Subversion of Biology" with the tagline: "New dogmas pose a grave threat to science by forcing reality to conform to progressive politics and morals." The article critiques six statements, with the first statement being the most relevant to the CSICon presentations: "Sex in humans is not a discrete and binary distribution of males and females but a spectrum." In the article, Coyne and Maroja argue that biological sex does indeed occur on a discrete and binary distribution of males and females based on one variable: which gametes a person's "body is designed to make." Males are those with bodies designed to make sperm, and females are those with bodies designed to make eggs.

In the article, Coyne and Maroja highlight several additional points. First, they state a small percentage of people are intersex, meaning that "*nearly* every human on Earth falls into one of two distinct categories" (emphasis added). Thus, in the article, they are not arguing that sex is *strictly binary* but that sex is binary "for all practical purposes." Second, they state that when others make the case for a sex continuum, they are actually conflating *sex* and *gender* (i.e., social identity), adding that "unlike biological sex, gender does form more of a continuum." Third, they express concern that some teachers have been unfairly treated for teaching that sex occurs on a binary. Finally, they suggest that "while jettisoning the sex binary is meant well, it also severely distorts scientific fact—and all the evolutionary consequences that flow from that fact."

Steven Novella: When Skeptics Disagree

On Friday morning of CSICon, neurologist and *SGU* podcast host Steven Novella opened his presentation by saying, "I love disagreement." He made the case that it's useful for skeptical science communicators to talk through their disagreements with each other to keep each other in check and hone their science communication skills. He also argued that "sometimes the disagreement comes down to semantics," suggesting that at times "we're talking past each other and don't even know it." Before talking about biological sex, Novella provided a brief history of other disagreements that have played out in the skeptical community over the past several decades with the first one being whether skeptics should debunk the existence of God. Other examples of disagreements included topics such as global warming, genetically modified organisms (GMOs), and nuclear power.

As Novella turned to biological sex, he indicated that "some people do not cleanly fit into one category or another." He used the case of complete androgen insensitivity syndrome (CAIS) to illus-

trate his point, indicating that people with CAIS would be classified as male when using the definition presented in the Coyne and Maroja's article. That is, they have testes, so their body was designed to make sperm; however, their testes are undescended (i.e., inside the body) and their bodies are resistant to androgens (e.g., testosterone), so in many important ways they develop more like a typical female (e.g., with a vagina and breasts). People with CAIS are often identified as female at birth and may not come to know they have CAIS until they don't start menstruation when expected. Overall, Novella argued that biological sex is multifactorial beyond simply which gametes a person's body was designed to make. In addition to gametes and genitalia, some other facets of biological sex include sex chromosomes, hormones, organs, and brain development. To this last facet, Novella argued that gender identity has many signs of being a neurological trait.

Neurologist Steven Novella

Jerry Coyne: Handling the Ideological Hot Potatoes

On Saturday morning of CSICon, Coyne's talk focused on both biological sex and race, with more time dedicated to biological sex (see Coyne and Maroja 2023 for comments focused on race). Rather than being a response to the Novella presentation from the previous morning, his points were primarily a discussion of the biological sex portion of the article described earlier. His arguments were aimed at debunking the claim that "sex in humans is not a discrete and binary distribution of males and females but a spectrum." He acknowledged that "gender is more of a continuum," occurring on a bimodal distribution. However, for this presentation, like the article, he was focused on biological sex, not gender.

Coyne showed where, in some journals and schools, biological sex is being described as occurring on a continuum. Consistent with his article, he offered the following definition of biological sex: "an individual's sex is defined by the types of gametes its reproductive anatomy is organized to produce." Regarding sex, he said that "it's very, very close to a binary with few exceptions," and he also added that "this is as close to binary as you can get." He argued that people are conflating *gender* and *sex*. Lastly, he disagreed with Novella's claim that gender identity is a neurological trait (using the term *brain modules* instead of *neurological trait*).

Steven Novella: Opening Comments from the Live *SGU* Podcast Taping

Later, on Saturday afternoon, Novella hosted a live taping of the *SGU* podcast. He took a few moments to reflect on the biological sex controversy, saying that Coyne's presentation "sounded perfectly reasonable," but also adding, "we disagree, and that's fine." He expressed concern that they were "talking past each other" but seemed optimistic they could find common ground. Regarding Coyne's response to Novella's position, Novella said, "I don't recognize my position in what he was responding to." Novella said that Coyne mischaracterized his position as being "that biological sex is a spectrum," adding, "that's not my position." Rather, Novella reiterated the position he described in his talk the day before: that sex is multifactorial.

Novella wrapped up these opening comments of the podcast by saying: "How you categorize biological sex is not one objective thing. There're multiple different ways you can do it. You can choose to do it one way—that's fine—but then it's context dependent, and you're choosing to do it that way. It's not *the* way; it's *one* way to categorize it."

Points of Agreement and Disagreement

In summary, neither Coyne nor Novella described *sex* as "strictly binary" and neither of them called sex a "spectrum." Conversely, both Coyne and Novella described *gender* as occurring on a spectrum. While acknowledging that people characterized as intersex do not fit well into the sex binary, Coyne argued that sex is still best considered binary, especially in terms of evolutionary biology. Novella, on the other hand, argued that there is more to biological sex than how the body is organized regarding the potential for gamete production. The back-and-forth exchange continued beyond CSICon online. You can find additional comments from both presenters in the Further Reading section below. ■

Further Reading

Coyne, Jerry. 2024. Vegas, CSICon, sex and nooz. *Why Evolution Is True* (October 26). Online at https://whyevolutionistrue.com/2024/10/26/vegas-csicon-sex-and-nooz/.

Novella, Steven. 2024. A discussion about biological sex. *Neurologica* (November 5). Online at https://theness.com/neurologicablog/a-discussion-about-biological-sex/.

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Coyne, Jerry A., and L.S. Maroja. 2023. The ideological subversion of biology. Skeptical Inquirer 47(4) (June/July): 34–47.

Novella, Steven. 2024. Episode #1012. *The Skeptics' Guide to the Universe* podcast (November 30).

Stephen Hupp is editor of Skeptical Inquirer.

Workshops, Wit, and Wisdom: A Showcase of Skeptical Sessions

ADRIENNE HILL AND CRAIG SHEARER

Cofounders of the National Capital Area Skeptics Chip Denman (left) and Grace Denman (right)

CSICon 2024 was my (Adrienne Hill's) fourth CSICon, and I must say, the best one I've attended yet. I reunited with old friends, made new ones, and soaked in the most outstanding schedule I've ever seen—everything from the opening remarks to the Sunday Papers hosted by Susan Gerbic and Rob Palmer was unparalleled. I was thrilled to be asked to write summaries for two workshops, a main stage presentation, and the Sunday Papers. Thankfully, my New Zealander friend Craig Shearer helped me out by summarizing one of the workshops I had to miss. Let's start with Shearer's summary of the Denmans' workshop, and then the rest of the reporting will be from me.

Chip and Grace Denman: Asking Good Questions of Others and Yourself

As cofounders of the National Capital Area Skeptics, Chip and Grace Denman are veterans of the skeptical community, and their experience and wisdom were apparent in their Thursday morning workshop. We often encounter people with beliefs that deviate from mainstream scientific understanding, and instead of attacking people for their dubious beliefs—which often leads nowhere—we can use questions to better understand their point of view. From a skeptical perspective, we would ideally like people to reevaluate their position to find out more. The Denmans provided valuable techniques for establishing a conversation using good questions that don't directly make people defensive but may perhaps encourage exploration.

A few suggestions from the session included asking one question at a time, asking open-ended questions, and avoiding "Why" questions. As skeptics, we often have specific technical knowledge about non-mainstream beliefs. It is vital to practice techniques that don't come across as lecturing. The workshop offered practical advice and examples of establishing rapport with others.

Kenny Biddle and Richard Saunders: Tricks of the Tricksters

This workshop started with Kenny Biddle, CSI's chief investigator, showing us how to recreate many social media videos that supposedly show evidence of ghostly activity. Using our cell phones, we learned how we can easily create teleportation or ghost videos using reflections. Many in the audience were able to make Biddle teleport with little practice. Biddle amusingly described his daily reenactments of a TikTok/YouTube creator's supposed interactions with ghosts. The video creator eventually challenged Biddle on his channel with scenarios he seemed to think would be impossible for Biddle to recreate. Spoiler alert: he was wrong! It's terrific that Biddle always reveals the se-

crets behind his tricks in his videos; it's like having a VIP backstage pass to a magic show. (You can view his videos at youtube.com/c/KennyBiddle.)

Next, Richard Saunders—the chief investigator for the Australian Skeptics, host of *The Skeptic Zone* podcast, and recent recipient of the Australian Skeptics Lifetime Achievement Award—captivated attendees with more hands-on activities. Using wire coat hangers as makeshift dowsing rods, participants tried their hand at locating a bottle of root beer, clearly visible to everyone. Most had their rods mysteriously move as they passed the bottle, showcasing the ideomotor effect. Next, Saunders demonstrated the pseudoscience of power balance objects (bands, patches, and jewelry) allegedly infused with "energy." Using a twenty-sided die as the energizing object, Biddle became the test subject. Remarkably, Biddle's balance, strength, and flexibility improved dramatically when holding the die due to Saunders's subtle adjustments in the way he pushed and pulled. Saunders concluded with a spoon-bending tutorial. However, the secret to *breaking* spoons, which Saunders performed for the grand finale, was left undisclosed—a tantalizing mystery.

Andrea Love: Echo Chamber vs. Evidence

Immunologist and microbiologist Andrea Love tackled why people reject scientific evidence for some issues but not others. She explained that political, social, and ideological beliefs often shape this inconsistency. For example, "tech savvy" Libertarians don't tend to embrace "biomedical advances but enthusiastically adopt other science technologies." Similarly, "educated and progressive" Liberals tend to "claim GMOs, pesticides, and 'chemicals' are harmful but accept other biotechnology." Alarmingly, anti-vaccination rhetoric straddles multiple ideologies.

Delving deeper, Love explained that opponents of GMOs know little about them. They often fail to answer fundamental questions while also unaware that genetic engineering is crucial for advances such as cancer cell therapy. Health anxiety is created by what Love called *chemophobia*—an exaggerated belief that most or all chemicals are generally "toxic" and cause significant health issues. For example, parabens, a commonly used preservative in cosmetics, have been demonized by the wellness industry. The experts needed in this case are toxicologists because the *dose* is problematic, not the simple fact that a substance merely contains parabens. As an unfortunate result of this health anxiety, cosmetic companies have replaced parabens with more costly, and less effective, preservatives that have been shown to cause more allergic reactions. Love concluded by suggesting we ask three key questions before sharing claims: Who is the source? What is their motive? (Are they selling something?) Can you verify the information?

Sunday Morning Papers

I have made a point to attend every Sunday Papers presentation since my first CSICon, and they never disappoint. In fact, I had the privilege of speaking at last year's event about Sallie Winchester and the Winchester Mystery House. That experience led to the submission of an article to this magazine, and it ultimately became the September/October 2024 cover story. For CSICon 2024, Susan Gerbic and Rob Palmer ran the event for the first time, and they curated an interesting and engaging morning.

First was ophthalmologist David Weinberg's presentation, "Irrational Exuberance: Trampling Scientific Boundaries for Fun and Profit." Weinberg highlighted historical and modern examples of dubious medical practices, from William Radam's nineteenth-century Microbe Killer cure-all to today's unregulated stem cell clinics. Some pa-

Australian Skeptics Chief Investigator Richard Saunders (left) gets some help in demonstrating the pseudoscience of power balance objects from CSI Chief Investigator Kenny Biddle (right)

Immunologist and microbiologist Andrea Love

The Sunday Morning Papers. From left to right: Susan Gerbic, David Weinberg, Daniel Reed, Bruce Behrens, Bernie Garrett, Sue Ieraci, Carolyn Dougherty, and Rob Palmer

tients have become legally blind after receiving unpurified stem cell injections directly into their eyes despite clear evidence from animal studies showing this is a dangerous practice.

Next was nurse practitioner Bernie Garrett, whose presentation "Why Is Deceptive Healthcare Thriving?" discussed the rise of internet health scams perpetuated by unlicensed professionals, worrisome wellness gurus, dodgy doctors, and dubious researchers. Garrett emphasized the need for increased use of evidence-based practices, improved education, better regulation, and more professional accountability.

A board-certified emergency physician from Australia, Sue Ieraci's talk was titled "Thalidomide, Vioxx … Why should I trust YOU?" She described how medical knowledge evolves, using examples such as thalidomide and tobacco to illustrate how early misconceptions have been corrected with new evidence. She also refuted the myth that doctors only get an hour of training in nutrition. In her conclusion, she emphasized that science-based medicine is superior to the alternatives, and she ended with a homeopathic cartoon—which was blank!

Daniel A. Reed, founder of the West Virginia Skeptics Society, shared his journey to "Making Critical Thinking Awareness Day a Reality" in his home state of West Virginia. Reed detailed the steps from submitting a request to successfully implementing activities aimed at promoting critical thinking. He now aims to expand the day further, hoping other states will follow suit, with the ultimate goal of creating a national Critical Thinking Awareness Day.

Research scientist and physicist Bruce Behrens, in his presentation "In Search of Skepticism in Science Museums," indicated that a science museum exhibit about bloodsucking creatures (both fake and real) inspired him to investigate the degree to which various science museums encourage skepticism. In the exhibit, a description of the chupacabra said nothing about Ben Radford's extensive work on the subject (such as his book *Tracking the Chupacabra*). Behrens went on to analyze the content of science museums, finding a lack of critical thinking in their displays. He proposed creating his own skeptical science museum, the Behrens Science Museum—or BS Museum (see bsmuseum.org).

Last was retired teacher, founder of Rational Roundtable in the Central Valley of California, and planning committee member for the SkeptCal Conference, Carolyn Dougherty. In her "Constructing Conversations Workshop," she shared her experiences facilitating sessions at the Osher Lifelong Learning Institute related to addressing misinformation and disinformation shared during personal conversations. Techniques included street epistemology, PEP talks (patience, empathy, persistence), and the CRAAP test (currency, relevance, authority, accuracy, and purpose) to evaluate source reliability. Dougherty highlighted the importance of clarifying questions, active listening, and finding common ground while also knowing when to disengage. ■

Adrienne Hill, a former high school mathematics teacher, is deeply involved in fostering critical thinking and education through her diverse roles. She serves as a board member for About Time and for the Tourette OCD Alberta Network, where she contributes as a presenter and educational consultant. She is an editor with Guerrilla Skepticism on Wikipedia and a reporter for *The Skeptic Zone* podcast. Her website is zonegiggler.ca.

Craig Shearer is former chair and secretary of the New Zealand Skeptics (https://skeptics.nz). Until recently, he was a regular contributor to the *NZ Skeptics Newsletter* and is a previous host of two Kiwi-focused podcasts—*Yeah, Nah* and *The CUSP*. He works professionally as a software architect and developer.

Three Countries, Three Tests, Three Failed Attempts: Investigations Group's $500,000 Challenge

JAMES UNDERDOWN

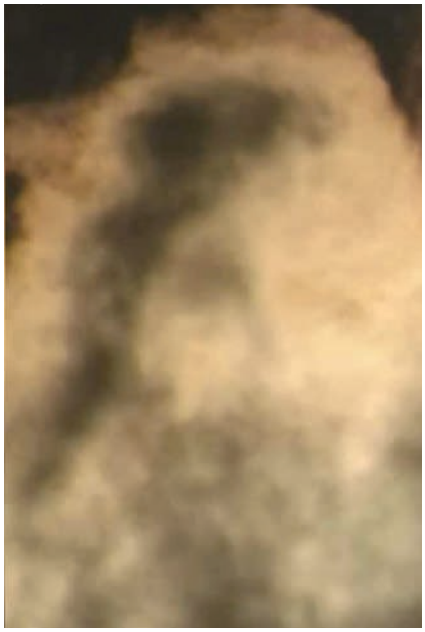
January 2025 marks the twenty-fifth anniversary of my founding of the Center for Inquiry Investigations Group (CFIIG) in a rented space in Playa Vista, California. Soon after, the James Randi Educational Foundation sent us an applicant from their Million Dollar Challenge, a man with a psychic dog named Sparky who was trying to get on Jay Leno's *Tonight Show*. Sparky had a failed attempt for our test, leading to the streak of failed attempts to demonstrate paranormal ability that remains unbroken to this day.

For a quarter century, the CFIIG has investigated scores of extraordinary claims, bogus products, shady educators, and purveyors of bad information. We've tested people claiming to be telepaths, dowsers, healers, telekinetics, fortune tellers, cloud movers, and other people with paranormal claims you probably didn't even know existed. No group in the world has put more supernatural claims to the test during this time. And onward we continue, bringing to bear the awesome weight of science and its methods onto the backs of those who would have us believe the unbelievable.

In 2024, it was a busy summer for the CFIIG and our $500,000 Paranormal Challenge. The group tested three international applicants—two via Zoom and one at CFI headquarters in Amherst, New York.

Determining Remotely If a Photo Was Covered or Not: Failed Attempt (6/15/24)

A resident of the Philippines claimed that he could determine via Zoom whether a specific photo was covered or uncovered in the conference room at CFI West in Los Angeles.



Blurry photo sent from the applicant to be used during the test

Through some unknown connection, the applicant thought he could see from some 7,000 miles away if the thick paper on which the card was mounted was folded over the image or open and facing up. He needed to get eighteen out of twenty guesses correct to advance to the money part of the test. If at any point he amassed three incorrect answers, the test would be officially over, but we would offer him the opportunity to continue to see what his score would be for the full twenty guesses.

I administered the test and turned the web camera after each guess so he could see the actual status of the photo, while one of our volunteers placed the photo on the table each time, having flipped a coin to determine whether it would be facing up or covered. This was done out of my sight to ensure that the test was double-blinded.

After some minor adjustments with the position of the camera (so that the status of the photo could be easily revealed), the test began. It was over in three guesses.

The applicant became rather animated and said in both English and Tagalog (we later learned), "Opposite! It was the opposite every time!" We offered him an opportunity to buck 100,000:1 odds by getting the next seventeen tries in-a-row correct (by guessing the opposite). He declined, so the test was over.

Answering Yes/No Questions about People in Photos: Failed Attempt (7/20/24)

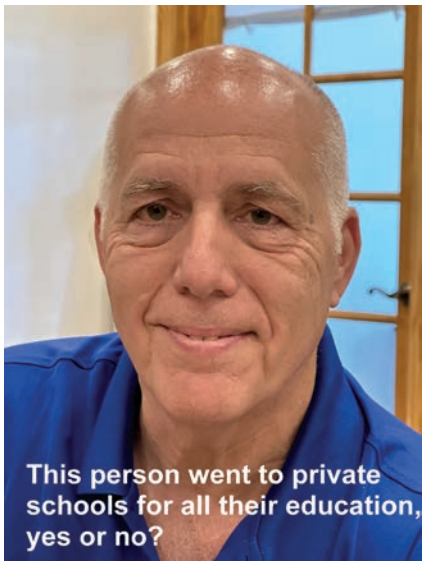
A month later, the CFIIG conducted another international test over Zoom, this time from Bogotá, Columbia. The applicant claimed that the Holy Spirit would help him answer a yes/no question about people in photos he was shown.

The test consisted of showing the applicant twenty individual pictures of strangers, each of which had a different statement printed under the image. Each statement could be answered either "yes" or "no." For example, one per-

son's photo said, "This person has a pet." We tried to couch the statements so the person's appearance would give no clue to the answer.

While the photo remained on camera, he had to give a response. We recorded his answer, then revealed the actual answer to him, which was covered by a flap of paper on the back of the photo. The photo never left his sight. I also administered this test and had no way of knowing the answers until he guessed; then I unveiled the true answer to him.

As in the test above (and most binary tests), he had to answer eighteen out of the twenty statements correctly. He, too, had the option of continuing if



Example from the test of photo with a yes/no question

he missed three.

It took the applicant five tries before the attempt was determined to be failed, but he decided to soldier on and answer all twenty statements. We like when applicants decide to finish the test so we can see how the probability stats turn out. In this case, he landed right in the pocket of expectation by scoring an eleven. Just as with a series of twenty (fair) coin flips, we'd expect to see nine, ten, or eleven correct guesses most often.

When asked, he initially had no explanation as to why he was unable to perform as he had expected. He later claimed that it was a demon—not the Holy Spirit—that he'd been in contact with.

Layout of the dowsing test at CFI headquarters

Dowsing for an Item: Failed Attempt (7/24/24)

The third test of an international applicant took place at the CFI headquarters in Amherst, New York, during a nationwide staff meeting. The applicant drove in from Canada. His claim was that he could dowse for any object that was hidden in a defined area and could do so accurately eight out of ten times.

Unlike most dowsers we've tested who believe they can find water, oil, or precious metals, this applicant said he could find *any* object. So, we gave him a choice of several knick-knacks from Kenny Biddle's office and let the applicant choose which one he thought he could most easily locate. Biddle also had a set of copper dowsing rods on hand that the applicant took an interest in. More about that later.

The test consisted of placing the target—a chrome lighter—under one of an array of twenty-five numbered red plastic cups, each approximately one meter apart. During each trial, a designated "placer" used a web-based random number generator to determine which of the cups to put the target under then left the premises before the applicant and all other observers arrived. Over a dozen CFI staffers were on hand at one point to watch the test, and we didn't want anyone present during the dowsing to know where the target was. We double-blind all tests when possible.

The applicant was not getting definitive indications from the dowsing rods and missed the first two tries. He decided to try Biddle's rods on the third try and was again unsuccessful. This officially ended the test, but he decided to go back to his own rods for a fourth try—also a miss.

While these results were expected—getting even five of ten guesses right in that size field would be somewhere in the 50,000:1 odds range—his attitude and responses were refreshingly unusual. He seemed to recognize that his earlier successes (at home) might have been purely due to chance. He also seemed to understand that he'd have to beat mighty long odds to succeed by luck alone. And when I offered the ideomotor phenomenon as a probable explanation for the rods moving, he cheerfully acknowledged the possibility.

I told the applicant it was a pleasure testing him and that he was probably the most skeptically minded person we have tested in our twenty-five years. Maybe he'll rethink it all before pursuing any further dowsing.

A Note of Thanks

Special thanks to CFIIG lead investigators Gary Whittenberger (first two tests) and Stan West for creating initial protocols and guiding these applicants from their applications to the testing phase. Thanks also to the following CFI staffers for helping with the test in Amherst: Bertha Vazquez and Julia Hassan kept score; Ben Radford, Richard Conn, Jeff Dellinger, and Debbie Allen took turns placing the targets; and extra thanks to Kenny Biddle, who prepared the dowsing field and leant us the targets. ■

James Underdown is the executive director of the Center for Inquiry Los Angeles and the chair and founder of the CFI Investigations Group.

[POSTCARDS FROM REALITY

ROBYN E. BLUMNER

Robyn E. Blumner is president and CEO of the Center for Inquiry and executive director of the Richard Dawkins Foundation for Reason & Science. She is a lawyer who previously held posts as a syndicated columnist and editorial writer at the *Tampa Bay Times* and as executive director of the ACLU of Florida and ACLU of Utah.

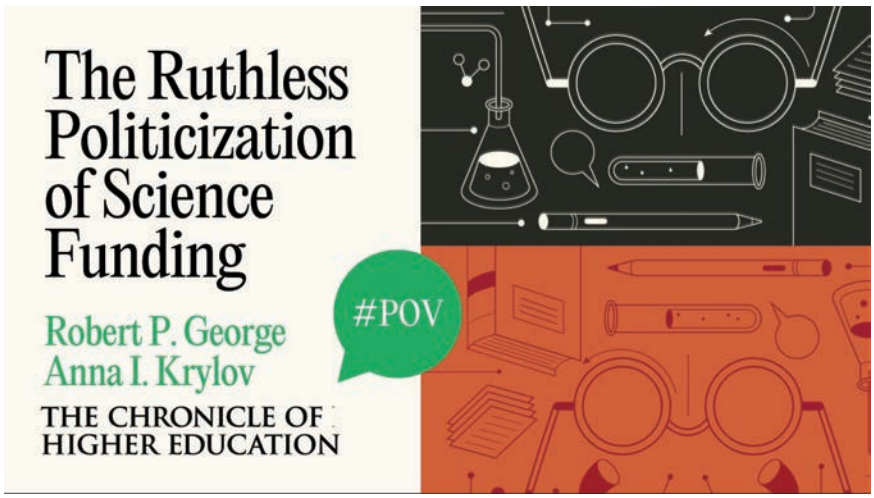
The Ideological Hijacking of Science Funding

There is nothing more indicative of the morphing of good, progressive intentions into a hectoring, dictatorial regime of illiberalism and forced ideological conformity than the current DEI apparatus.

While the terms *diversity*, *equity*, and *inclusion* all represent worthy aspirations, the way that related policies have often been deployed in practice looks more like Chinese reeducation camps where no dissent is brooked.

In many programs, *diversity* does not seem to mean welcoming people from vastly different backgrounds, views, or socioeconomic conditions. It means a laser focus on certain racial minorities (*not* Jews and Asians) and certain gender identities. *Equity* does not seem to mean equality of opportunity to ensure fairness regardless of race or gender. It means a regime of racial and gender representation that perfectly reflects population demographics, with any departure chalked up to racism or sexism. *Inclusion* does not apparently *include* White people—and White men in particular—Jews, Asians, straight people, and the able. Often it doesn't include these folks even if the people in these categories are in and of themselves poor and struggling.

That kind of oppressive, identitarian DEI apparatus has insinuated itself into almost every category of institution, from the academy to the nonprofit world to corporate America. But where it is doing the most damage to people concerned about promoting and advancing science is in the arena of grant funding, where fealty to DEI has become a requirement for many science grants. Considerations of merit have been nudged aside in its service.



An important piece on the issue appeared in July in *The Chronicle of Higher Education* by authors Robert George and Anna Krylov (George and Krylov 2024). Titled "The Ruthless Politicization of Science Funding," the authors document just how extreme this orthodoxy has become and how much of science funding has been negatively impacted. They lay much of the blame on a federal mandate issued early on by then-President Joe Biden through executive orders (specifically EO 13985 and EO 14091). These executive orders essentially required scientists to demonstrate that their research and their teams advance DEI goals in ways that can take precedence over merit.

I am writing this after the November 2024 election but before the new administration has taken office. Undoubtedly those executive orders will be withdrawn—probably by the time you are reading this. But this wild seesawing between making DEI loyalty oaths and goals a supreme *diktat* and making the very idea of diversity *verboten* is not good for science. Science requires sober, long-term, predictable investments of time, money, and expertise. It should not be used as a political cudgel no matter who is in charge.

In this case, though, I blame the Democrats for acceding to left-wing identitarian demands to turn us all into two-dimensional representatives of our melanin, gametes, and pigeonholed identities. Frankly, it's patronizing, and in this case it interferes with the pursuit of real science, which should be entirely merit driven.

As a quick aside, when I was a newspaper columnist in the late 1990s, the paper had us all take diversity training. We were all asked to identify our race, and—I'll never forget this—a Black employee in the physical plant department answered "human." He said that he resented all this focus on race, even if well meaning, and that we should all just be considered part of the human race.

He knew better than any highly paid consultant I've ever met.

In their *Chronicle* piece, George and Krylov describe the current situa-

tion for scientists who hope to receive research funding from one of these federal agencies: the National Science Foundation, the Department of Energy, the National Institutes of Health, or the National Aeronautics and Space Administration (NASA). The authors say that what was once an exercise in pure scientific merit has changed. Now, scientists must demonstrate how their proposed research will promote DEI goals. That means first confessing the sins of their own institutions or fields of study as being part of a systemic problem—whether that is true or not and whether they believe it is true or not—then laying out a plan for remediation.

George and Krylov point out if you are a scientist applying for funding from the National Science Foundation's Centers for Chemical Innovation grants, a two-page Diversity and Inclusion Plan is required. The funding agency wants to see "diversity and inclusion" in the research team "at all levels" and in leadership and advisory groups. In other words, building a team is an exercise in racial and gender bean counting.

They cite a blatant example of this at the National Institutes of Health, where in 2021 scientists were told that if they identified as Black or from another underrepresented group, their applications would be given additional consideration "even if the quality score that peer-review panels award the proposals falls outside the cutoff for most grants." That effort was retracted but there is still clear "diversity-speak" messaging that the race of who is on the team counts for funding purposes. This is despite federal civil rights law that prohibits taking race into account as a condition of funding.

Just how far all this has gone was driven home by a startling report by Senator Ted Cruz ("New Cruz Investigation" 2024). When the report was released in October, Cruz was the ranking member of the Senate Committee on Commerce, Science, and Transportation. His not-subtle press release declared, "New Cruz Investigation Reveals How Biden-Harris Diverted Billions from Scientific Research to DEI Activists," and it included the accompanying table of funding over the past four years for the National Science Foundation (NSF), one of the federal government's main science grant-making institutions.

And before you dismiss the report as purely right-wing propaganda, my question is why are we giving people such as Cruz this kind of ammunition? Even if the report is full of cherry-picking and exaggerations, which it undoubtedly is, some of those cherries are really bad. And it is just those kinds of examples that put science and science-funding on the defensive.

Jerry Coyne, emeritus professor of evolutionary biology from the University of Chicago, reviewed the report on his (highly recommended!) website Why Evolution Is True and reported that active researchers and scientists tell him that the entire system of grant making has changed in the past decade "exactly in the way [the Cruz report] describes" (Coyne 2024). Basically altering the grantmaking process from one of pure scientific merit to an exercise in so-called social justice.

The Cruz report identifies a Biden Administration–created "Task Force on Scientific Integrity" that was charged with reviewing "the impact on scientific integrity of diversity, equity, and inclusion practices" at all science agencies. The Task Force determined that federal science agencies should incorporate "DEIA considerations into all aspects of science planning, execution, and communication" (the "A" stands for accessibility).

What does that look like? The Cruz report provides some examples:

- In 2022, NSF gave Columbia University $4.4 million for its Implementing Novel Solutions for Promoting Cultural Change in Geoscience Research & Education (INSPIRE) program to "decolonize geoscience."
- In 2023, Shirin Vossoughi of Northwestern University was co-principal investigator for an NSF grant of over $1 million for a project titled "Reimagining Educator Learning Pathways through Storywork for Racial Equity in STEM." The Cruz report points out that she had coauthored an op-ed in 2020 claiming "the ideology of white supremacy permeates all of the nation's institutions, including our existing system of STEM education, whether or not they claim

% OF NSF DEI FUNDING IN BIDEN-HARRIS ADMINISTRATION'S ANNUAL NSF FUNDING

YEAR	TOTAL FUNDING	DEI FUNDING	% OF ANNUAL FUNDING
2021	$4,930,209,488	$14,280,928	0.29%
2022	$4,946,237,805	$814,547,727	16.47%
2023	$4,975,714,881	$939,831,338	18.89%
2024	$1,064,411,166	$289,593,584	27.21%

SOURCE: *COMMITTEE ANALYSIS OF USASPENDING DATA*

to embrace diversity."

- In 2023, NSF awarded nearly $5 million to three university researchers for the ongoing project "Black Girls as Creators: An Intersectional Learning Ecosystem toward Gendered Racial Equity in Artificial Intelligence Education." Tara Nkrumah, who obtained nearly $3 million of that grant, is an assistant professor at ASU's School of Social Transformation and Center for Gender Equity in Science and Technology. She and her coauthor wrote in a 2021 article, cited by the Cruz report, that "intersectionality, critical race feminism, culturally relevant pedagogy, and the concept of resistance" should be applied to STEM education. *They said STEM was "'strangled' by a paradigm of whiteness*" (emphasis added).

And it's not just that science research dollars are being used to support an ideological agenda that condemns White biologists, chemists, physicists, geologists, engineers, and computer scientists for their race. It's that this makes science a subjective and politicized endeavor rather than what it should be: a highly competitive, rigorous, evidence-based enterprise with measurable standards and outcomes that advance America's scientific and technological prowess without regard for who is doing it.

Trust in science has sharply declined since the COVID-19 pandemic and has done so most starkly along partisan lines (Achenbach 2024). Surveys conducted by the Pew Research Center show that among Republicans confidence in scientists went from 85 percent in April 2020 to 66 percent in October 2024. Whereas 88 percent of Democrats expressed confidence in scientists in the latest survey (Tyson and Kennedy 2024). Science and scientists have lost their perceived political neutrality, and that is not a good outcome for any of us.

I anticipate many challenges ahead for science as a result of who the Trump administration intends to put into key posts. The announced nominees for various public health and science posts are a gallery of anti-vaxxers, pseudoscience boosters, conspiracy theorists, and unqualified hacks. It's wholly disheartening. But if there is any tiny sliver of good to come out of it, maybe, just maybe, there will be a reboot of science research funding and a return to a process in which recommendations come out of quality peer-review by people with relevant scientific expertise—a reboot free of considerations of the researchers' race or gender or whether their research advances DEI goals. I believe our future as a prosperous country depends on letting scientists do science and science alone. ■

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[INVESTIGATIVE FILES JOE NICKELL

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Possession? Exorcism? Murder? *The Devil on Trial*

In February 2022, I was interviewed in Connecticut for a new film about self-styled demonologists Ed and Lorraine Warren and their involvement in an imagined case of demonic possession, attempted exorcism, and a very real murder. However, before Netflix aired the film, *The Devil on Trial*, the British producers told me in a private telephone call from England that they were required to excise me entirely—along with that portion of the Warrens' and my appearance together on a *Sally Jessy Raphael* episode that aired October 30, 1992, just in time for Halloween. What on earth had I said?

The Warrens

Ed and Lorraine Warren, both now deceased, hailed from Monroe, Connecticut, and made a business of spirits. They were Catholics, but their thinking adopted the ignorance and superstitions of earlier times—centuries earlier, when the Devil was believed to be a real entity and people who could be associated with him were burned at the stake. The two began dabbling in so-called spirit phenomena in the mid-1940s. However, by the 1970s, they began to come into public view.

At the height of their success, Ed was a burly man in his late sixties who offered a business card billing him as a "Demonologist." Lorraine, a year younger and sporting a bouffant hairdo, claimed to be a clairvoyant. They were other things, to be sure, ranging from "passionate and religious people" to "scaremongers" and other appellations. One skeptic called them "total Charlatans" (Duckett 1991).

They began their work by climbing on the popular bandwagon of ghost hunting. Ed became director of something they called the New England Society for Psychic Research. They monitored local newspapers to learn of homes or business sites that seemed to be troubled by unseen mischief makers. The Warrens would show up, offering their "expert" services. Their approach was to convert the case into one of a sinister aspect, involving evil spirts or demons.

Their eventual books included *Ghost Hunters: True Stores from the World's Most Famous Demonologists* (Warren et al. 1989) and *Graveyard: True Hauntings from a New England Cemetery* (Warren et al. 1992). One "poltergeist" case, that of the "Lindley Street Infestation," proved to be only the mischief of a young girl who fooled the Warrens but was caught and confessed to police (Nickell 1995, 89–92). In another case, that of a haunted cemetery, the Warrens obtained, for example, "orb" photographs. However, those are caused not by ghosts or other spirits but by particles of dust close to the camera lens that reflect the flash to appear like brilliant balls of light (Nickell 1995, 69–72). I conducted several investigations in which I followed in the Warrens' footsteps and found the couple notably unenlightened.

The Conjuring

Even before *The Amityville Horror*, the Warrens would latch onto the "haunted" Perron family—Roger and Carolyn and their five daughters—who had moved into an eighteenth-century Rhode Island farmhouse in 1971. The Warrens were not sought out by the family, as represented in the 2013 movie *The Conjuring*, but just showed up at their door on the night before Halloween 1973 (Bartholomew and Nickell 2015, 57–77).

I would years later be invited to the historic colonial-style home by Norma Sutcliffe who, with her husband Gerry, acquired the property in 1987. I visited in June 2016 to investigate on site the horror movie's fictionalized and fantasized story. Guided by her, I toured the house and property and visited old cemeteries and archival repositories—all helped to further dispel the outright falsehoods and exaggerations used to promote yet another bogus case of demonic activity and demon possession.

Briefly, I analyzed the Perrons' claims and showed that they were consistent with the effects of strong winds, misperceptions, schoolgirl pranks, and vivid dreams—such as common "waking dreams" that have plagued so many in similar cases. (Occurring between sleep and wakefulness, this phenomenon has

aspects of both and can seem very realistic.) Additional elements included simple suggestion, role-playing, and still other factors—including one child having had an imaginary playmate—and the effects of memory after some thirty to forty years (Nickell 2016). The Perrons repeatedly proposed supernatural explanations for mundane events—even before they found themselves under the spell of the Warrens.

On their visits, the Warrens continually hyped the ideas of negative energy and supernatural forces. To dispel these, there was but a simple solution: a séance. The Warrens' intention was to use the pretext of a séance to conduct an exorcising of the house. They arrived with an entourage that included a parapsychologist, a priest, and a camera crew. Roger Perron refused to participate, and at one point he became so angry at Ed Warren's manipulations that he hauled off and punched the demonologist in the nose, dropping him to the floor and causing blood to stream.

As it happened, the visiting group's photographs and film all were discovered to be blank and so failed to verify the dramatic séance as had been claimed by the Warrens. As the visitors all left, Roger again showed his anger and contempt for what he declared had resembled a circus sideshow by slamming the door behind them (Bartholomew and Nickell 2015, 71–72).

Amityville

The Warrens' first big opportunity came in the wake of the famous—and infamous—haunting of a six-bedroom Dutch Colonial on Ocean Avenue, in Amityville, New York. After only twenty-eight days, the Lutz family—George, Kathy, and their three children—fled the house, telling stories of how sinister forces ripped open a door and windows, bending locks and hinges; left cloven-hoofed tracks in the snow outside; and produced myriad other ostensibly paranormal phenomena, including speaking in a masculine voice, "Get out!"

New York's Channel 5 news decided to further investigate the reports concerning the "cursed home." Their notion of investigating involved enlisting the Warrens and other psychics to hold a series of séances in the house. To supposedly "provoke" the evil sources, they placed on the dining room table some blessed candles and a crucifix. Soon, one psychic claimed to feel ill. Another, in a purported "mediumistic trance," gasped, "It's upstairs in the bedroom." Lorraine Warren divined the entity was "most definitely of a negative nature … It is right from the bowels of the earth." The group concluded that the house held a "demonic spirit," one that could be removed "only by an exorcist" (Anson 1977, 287–290). Soon a book was in the offing: Jay Anson's *The Amityville Horror*, boldly subtitled *A True Story*.

Alas, in response, the couple who subsequently purchased the house, James and Barbara Cromarty, poured ice water on the hellish tale. When I visited Amityville as a consultant to the *In Search of…* television series, Barbara Cromarty tipped me off that she had evidence the whole affair had been a hoax. So, when the then-forthcoming television series *That's Incredible* called to ask my advice about filming inside

The Amityville Horror House. Credit: John Arehart | Shutterstock

the house, I recommended having Barbara take the TV camera on a tour of the house, pointing out how the doors and windows still had their old hardware and varnish—proof the alleged demonic damage had never occurred.

Other claims in the Lutzes' account were also disproved. For example, George Lutz's claim of cloven hoofprints in the snow were shown false by weather reports proving there had been no snowfall at that time (Morris 1978, 99–100). Among other revelations was that the police had never been called to the house, as frequently claimed (Moran and Jordan 1978, 44–46; Nickell 2012, 293).

Worse was yet to come. By the time the movie had opened (on July 27, 1979), the Lutzes' attorney, William Weber, was revealing that the elaborate tale was a hoax. He told in some detail how the account came about in his law office: "We created this horror story over many bottles of wine that George Lutz was drinking." The Cromartys also sued the Lutzes, Anson, and the publishers for the loss of privacy they suffered. The suits were reportedly settled in favor of the Cromartys for a six-figure sum. When I appeared with the Warrens on the 1992 *Sally Jessy Raphael* episode, Ed Warren loudly denied the story was a hoax—although the truth was clearly otherwise (Nickell 1995, 128–129).

Southington Demons

In 1986 began a case that would become a milestone for the Warrens and cause my path to cross theirs (on the *Sally* show). It began at a spooky site in Southington, Connecticut. The old house was the new home of the Snedeker family—Allen (a quarry foreman), Carmen (a "devout Catholic"), their four children, two nieces, and a pet ferret. They soon learned about the house's previous incarnation when they discovered in the basement a box of coffin handles, a blood drainage pit, and a chain-and-pulley casket lift—unmistakable leftovers from the previous business, the Hallahan Funeral Home.

Soon the eldest son, Philip, whose bedroom was adjacent to the gruesome area, reported seeing ghosts, although his parents say they first attributed that to cobalt treatments he was receiving for Hodgkin's disease. Philip's personality changed drastically: he began wearing leather, became interested in demonology, and reportedly broke into a neighbor's home. The phenomena allegedly continued for two years. A seventeen-year-old niece claimed an unseen hand fondled her on occasion as she lay in bed. Carmen herself reported noises and physical attacks—especially alleged demonic sexual attacks on her.

Then the Snedekers brought in the Warrens—literally: they moved into the house for nine weeks. While denying there was any book deal in progress, the Warrens had made just such an arrangement. Soon both Al and Carmen were publicly claiming to have been raped and sodomized by demons—claims they repeated on national television shows (notably the Halloween 1992 *Sally Jessy Raphael* episode). They were now promoting their book with the Warrens! Meanwhile, others who had previously lived in the house said they did not believe in ghosts and found the claims ridiculous. The landlady asked: "If the ghosts really are there, then why did the Snedekers stay there over two years and why are they staying there now? Are they looking for publicity or profit, or what?" (quoted in Nickell 2012, 285).

Revealing information now began to come to light—about Philip's drug use, vandalism, and other misbehavior. As to the sexual touching that Carmen's niece had felt, the boy was actually caught

Ed and Lorraine Warren as portrayed in *The Conjuring* series played by Patrick Wilson and Vera Farmiga.

fondling his two cousins as they slept. He was reported to police and taken to the juvenile detention center, where a psychiatrist diagnosed him as having schizophrenia (Nickell 2012, 285).

The landlady's husband summed up: "It's a fraud. It's a joke. It's a hoax. It's Halloween." Those comments appeared in a brilliantly titled newspaper article (Schmidt 1992), "Couple Sees Ghost; Skeptics See Through It."

The Devil on Trial

At last, we come to the case that inspired the Netflix documentary mentioned in our title and thus this article itself. Netflix forced the producers to eliminate yours truly from the film—apparently because I was too hard on the Warrens, especially poor Ed himself. Is that even possible?

Titled *The Devil on Trial*, the documentary looks back on the shrewdly and relentlessly hyped example of alleged demonic takeover, otherwise known as the Brookfield Possession Case. It came to the public's attention in February 1981 after a young man named Arne Cheyenne Johnson was arrested for murder. This was the culmination of the bizarre case that began some eight months before in that quaint and historic town in Connecticut.

The story featured the Glatzel family—Carl and Judy; daughter, Debbie (26); and three sons: Carl Jr. (14), Alan (13), and David (11). Debbie also had a son, Jason (7), and she and her beau, Arne Johnson, planned to be married in the fall. Meanwhile, the couple found a house on which they paid a deposit, and the Glatzel boys were helping to fix up the place.

Soon, as Gerald Brittle asserts ([1983] 2021, 21), "within the hour an incident would occur that would mark the beginning of an incomprehensible, diabolical siege that, in time, would forever change the lives of every member of the Johnson and Glatzel families." It began with young David. Suddenly, he felt he had been pushed onto a bed, and he encountered a specter he could see through! This transparent figure of an old man said only one ominous word—"Beware!"—and faded away. Now, David told the others he had seen a ghost, though science has never found such an entity. Instead, the boy almost certainly had a "waking dream" experience. Doubtlessly tired, he slipped into the state between sleeping and waking. The feeling that he was being pushed down was the brief onset of "sleep paralysis," an inability to move because the body itself is in the sleep mode (Nickell 2012, 352, 353–354).

But upon returning home, David had other experiences: Bruises and scratches appeared on his body; he would wake screaming; and he saw the old man again, now with horns and jagged teeth. Other family members heard unexplained sounds in the attic. Soon they called in the Warrens, who ratcheted up the experiences. Lorraine described a black mist next to David while her husband was interviewing him. The couple rejected all talk of ghosts and insisted they were demons instead. Ed coached David about their behavior (Brittle [1983] 2021, 11–138).

Due to suggestion or simple play-acting, David obtained more and more attention. His arms and legs would quiver, his eyeballs rolled upward so that only the whites were seen, and he would groan strangely. Ed Warren lobbied the local diocese, and a priest came to bless the house. Finally, a formal exorcism was held, but a team of priests failed to drive out the purported demon.

There upon Debbie's beau, Arne Johnson, boldly challenged the demon to possess him instead of David. That supposedly happened—with tragic consequences: Several months later, while Johnson and his landlord, Alan Bono, were drinking together and arguing, Bono suffered several chest wounds from Johnson's pocketknife. He died hours later, and Johnson was arrested for the crime (Brittle [1983] 2021, 243–293).

Arne Johnson was charged with first-degree manslaughter. The long and sordid story became known as "The Devil Made Me Do It" case, but the judge was having none of it, disallowing the claim as "irrelative and unscientific." On November 24, 1981, Johnson was convicted and sentenced to ten to twenty years, although he served only five. (He and Debbie Glatzel married while he was in prison.) The entire affair yielded numerous productions, notably Gerald Brittle's book *The Devil in Connecticut* ([1983] 2021), and the feature film *The Conjuring: The Devil Made Me Do It* (2021).

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And now we have the recent documentary, *The Devil on Trial* (produced by Dorothy St. Pictures, United Kingdom). I was, ah, exorcised from the film, on the insistence of Netflix—possibly out of a misguided attempt to "show both sides" equally—which our encounter on the *Sally* show gave the lie to: Viewers could witness fraudster and bully Ed Warren actually trying to keep me from being heard by talking loudly over me! Some of the coauthors of the couple's books have admitted that Ed Warren—who died in 2006 (Lorraine followed in 2019)—told them to make up incidents and details to create "scary" stories (Nickell 2012, 264). At least no one claimed the Devil made them do it! ■

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[NOTES ON A STRANGE WORLD MASSIMO POLIDORO

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Too Much Empathy

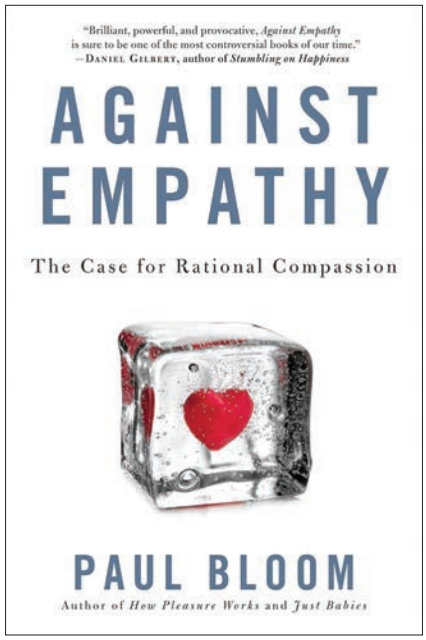
It is widely believed that empathy is a purely positive emotion, something worth cultivating at all costs. However, not all scholars share this view. According to Paul Bloom, a psychologist at Yale University and author of *Against Empathy*, empathy may hide a darker side. Bloom is known for his work at the Infant Cognition Center, where he has explored how reasoning and sociality develop in children. And yet when he declares himself "against empathy," he often provokes astonishment or even amusement, as though denying the goodness of such a feeling were the same as declaring oneself "against kittens" (Bloom 2016, 21).

The reasons behind his skepticism lie in the belief that empathy, in and of itself, is a poor moral guide and should instead be tempered by reason. Bloom points out that we are more inclined to feel empathy for those we see as close, who resemble us, or who appear more attractive or vulnerable. Consequently, empathy does not extend equitably to everyone but concentrates selectively, running the risk of fueling prejudices and distorted perceptions.

Us and Them

Bloom explains that empathy operates like a spotlight, illuminating only a small fraction of reality, leaving the rest in darkness. In this way, it does not bring people together but instead reinforces the separation between "us" and "them." Even though we can rationally recognize that people far away from us suffer just as much as our neighbors do, it is nonetheless easier to identify with those who are most similar to us in terms of culture, appearance, interests, or other demographics.

For instance, a White American might sincerely believe in the equality of people from different ethnic backgrounds, but when it comes to empathizing with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AGAINST EMPATHY
The Case for Rational Compassion
PAUL BLOOM
Author of *How Pleasure Works* and *Just Babies*

someone experiencing difficulty, that person might unconsciously align more with someone who shares the same background. In this sense, empathy can become a tool of division: what benefits some individuals harms the perception of others in a way not unlike prejudice (Bloom 2016, 37–38).

This selective nature means that empathy can also be manipulated for extreme purposes. From conspiracy theories accusing Satanic elites of kidnapping children to ideas about "ethnic replacement," anyone capable of crafting narratives that evoke support for their own group (and consequent hatred for others) can convince large numbers of people to carry out violent acts—from murder to terrorism and even war. To achieve this, there is no need for objective truth; all it takes is a plausible story that plays on fear and selective empathy.

Show Compassion

So, what should we do? Become cold as ice in the face of human suffering? No. The kind of empathy required here is not *cognitive empathy*—which is a terrible moral guide according to Bloom—but rather a form of rational compassion, kindness, and concern for improving other people's circumstances. However, this means being compassionate. Compassion is a positive emotion; it's detached and therefore more controlled and constructive. It does not lead us to share another person's suffering but rather to see it, acknowledge it, and, as a result, spur us into action. It gives us energy and turns us into an example for others. For example, when a child cries in the middle of the night, they don't need a parent who starts whimpering and hiding under the covers because they "share in the suffering" (as would happen with empathy). What they need is someone who will comfort them and try to calm them down (with compassion). Make it clear that your goal is to understand, not to judge or condemn. And remember that understanding someone does not mean sharing or embracing their ideas. You can grasp the mindset of a terrorist, a fascist, or a murderer without recognizing any validity in their beliefs.

As Bloom's research shows, and as Dutch journalist Rutger Bregman writes, "Rationally understanding someone is a learning process. It's a muscle you can train" (Bregman 2021, 321). Before taking action, we should ask ourselves whether our emotional response is genuinely helping others or merely reinforcing differences and prejudices. Only by striking a thoughtful balance between emotion and critical thinking can we avoid the pitfalls of excessive empathy. ■

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Maybe, Do Stop Believing—in Rituals

It's happened again. Back in 2014, I published a revision of my book *Believing in Magic: The Psychology of Superstition*, and I included the famous German "lucky golf ball study," which suggested that people who were handed what they believed was a lucky golf ball actually performed better when asked to putt the ball into a cup than people whose ball was not described as lucky (Damisch et al. 2010). I have long thought that, in the context of skilled performance (e.g., sports), it seemed plausible that performing a superstition might have a psychological—not magical—benefit that could produce better performance on the field, and this was the first study to show this kind of effect. Unfortunately, after my book went to print, a different group of researchers conducted two different studies—with larger groups of participants—in an attempt to reproduce the golf ball results, only to find no effect of belief in luck (Calin-Jageman et al. 2014). Bummer. Another promising study felled by the reproducibility crisis in psychology (Piper 2020), creating an error that will be frozen in my book for perpetuity.

Now it has happened again but for a different reason. In my 2022 book *The Uses of Delusion: Why It's Not Always Rational to Be Rational* and in an article for Skeptical Inquirer (Vyse 2018), I cited a group of studies that seemed to show that performing a ritual before executing a skilled activity lowered anxiety and improved performance. In the classic example, college student participants were invited into the laboratory not knowing what to expect and were told that, with the aid of a karaoke machine, they would be asked to sing the song "Don't Stop Believin'" by Journey in front of an experimenter (Brooks et al. 2016, Study 1a). The participants were tested individually and randomly assigned to either a "ritual" or "no-ritual" group. Prior to singing, the participants in the ritual group were asked to do the following: "Draw a picture of how you are feeling right now. Sprinkle salt on your drawing. Count up to five out loud. Crinkle up your paper. Throw your paper in the trash."

In contrast, the no-ritual participants were asked to simply sit quietly for a minute, the same amount of time the other group was given to do their ritual. The experimenters used a karaoke machine program that automatically recorded singing errors, and after singing, each participant was moved to another room where they sat at a computer and answered questions about the emotions they felt just before singing.

The results showed that people who performed the ritual made significantly fewer singing errors and reported lower levels of anxiety prior to singing. Subsequent studies in the Alison Brooks et al. (2016) article, using either the singing procedure or an impromptu math test, showed that both self-reported anxiety and heart rate were reduced in the ritual group, and that this reduced anxiety caused better singing or better scores on the math test. Furthermore, if the same series of actions was described to the participants as "random behaviors" instead of a ritual, the effect was significantly diminished.

I found these results fascinating for the same reason as the golf ball study. There was an obvious symbolic feature to the ritual ("draw a picture of how you are feeling right now") but the ritual was not explicitly superstitious or religious. If these rituals worked, they might show that some of the superstitions performed by athletes and others might have a psychological effect that produced better performance. Furthermore, the researchers had identified the reduction of anxiety as the mediating variable. For me, this was a very exciting result—until the study was retracted.

In November 2024, the publisher of *Organizational Behavior and Human Decision Processes* posted a notice indicating that the "Don't Stop Believing" article was being retracted. The authors of the article had approached the editor-in-chief with a request that it be retracted because they "no longer [had] confidence in the integrity of the data" (Brooks et al. 2024). After an investigation, the journal's retraction committee agreed that the article should be retracted, and the notice was posted.

There were several possible problems with the handling of the data for several of the studies—the article included a pilot study and five other experiments—but the primary concern was about Study 1b, which measured self-reported anxiety and blood pressure at several points before singing "Don't Stop Believin'." According to an internal audit summarized by Juliana Schroeder (n.d.) of the University of California, Berkeley, one of the authors of the study, there was evidence of manipulation of the heart rate data. Neither the audit nor the journal's retraction notice used those words. Instead, they said "there were streaks of heart rate ratings that were unlikely to have occurred naturally" (Brooks et al. 2024). But before we go much further, let's step back and look at how this process works.

How Could This Happen?

Nowadays, it is very common for psychological research to be highly collabo-

rative. Top journals encourage researchers to conduct several experiments per article to establish confidence in the findings, and the labor and financial requirements of conducting all those experiments can be substantial. In the case of the "Don't Stop Believing" study, the data from one smaller pilot study and five experiments appear to have been collected at three different universities by different people at each location, resulting in seven authors on the final publication. In studies like these, each experiment typically involves multiple personnel, and the data pass through various stages before appearing in print in the final publication. Research is done in different ways, but Figure 1 shows a common process. If the experiment is done in a laboratory setting, as all but the pilot study were in this case, the participants might arrive at the lab, be greeted by one or more undergraduate research assistants who conduct the study under the supervision of a graduate student researcher, who is, in turn, supervised by a faculty member, the principal investigator (PI) for the study. In this case, data collected by the research assistant(s) would go to the graduate student for statistical analysis under the supervision of the PI. If we multiply this process by several experiments across several different universities, you can see that many hands are potentially involved.

The data also have a path in this process. Often, as in this case, the measures recorded for each participant are either collected automatically (e.g., the karaoke singing errors) or entered by the participant. In these studies, at various points in the procedure the participants sat at a computer and answered questions, and in the case of Study 1b, the heart rate data were also entered into the computer by the participants. They were asked to measure their own heart rate using a finger pulse oximeter and enter the results into the computer at three different times: (a) before being told they would have to sing in front of other people, (b) after they were told they would have to sing, and (c) after doing their ritual (or not, if they were in a control group).

Once all the participants have been run, the numbers come out of the computer software in a "raw data" file, exactly as they were entered by each participant, but typically this file is not in a form that is ready for statistical analysis. It usually contains extraneous data that will not be used in the study, and it sometimes contains results from participants who should not be included for some reason. As a result, the data to be analyzed are typically extracted from the raw data file and placed in a smaller Excel file. The extraction of data might involve the work of a research assistant, but often it is done by a graduate student or faculty member. This Excel file would be submitted to statistical analysis and ultimately reported in the article.

Under current Open Science research standards, most of this process would be transparent. The researcher would post their plans for the experiment on a public website before getting underway, and any changes along the way would also be posted. Most importantly, the raw data file, the extracted data file, and the statistical procedures used in the analysis would all be posted online as they became available. Detecting any unjustified manipulation of the data requires comparing the raw data file to the extracted file used to produce the final results, and in the case of the "Don't Stop Believing" study, unfortunately none of the raw data files for any of the experiments was available. At a few places in her summary of the internal review, Schroeder (n.d.) used the somewhat ambiguous phrase the raw data "were not shared," leaving it unclear whether the data were lost, inadvertently deleted, or simply not provided by the researchers. Although the raw data was not available for studies 3 and 4, both conducted at the University of Chicago, an early version of the extracted data was provided, which revealed that some participants had been eliminated from the earlier version of the data and that this change affected the outcome of the experiment.

In the case of Study 1b, although the raw data was not shared, the extracted data file was available, and, as indicated in the retraction notice and further explained in the summary of the internal audit, the heart rate data showed some peculiarities. For example, there were several streaks of unusual data among consecutive participants in the file. At the final heart rate measurement point, ten consecutive participants had heart rates of 81, which seems very unlikely. Two other series of consecutive participants showed linearly increasing heart rates, and throughout the file there were an unusual number of heart rates that appeared as round numbers (e.g., 75, 80, 85, 90, 95). There were concerns about several of the experiments, but in making their decision, the journal editors singled out Study 1b, which was conducted at the Wharton School of the University of Pennsylvania.

But Wait, There's More!

I was a real fan of the "Don't Stop Believing" study, but it seems obvious now that it cannot be trusted, and the retraction was justified. But to make matters worse, another study, "Enacting Rituals to Improve Self-Control" (Tian et al. 2018) was retracted in spring 2024. Four of the six authors of this study were also coauthors on the "Don't Stop Believing" study. In this case, the retraction notice indicates that for fifteen participants in the first experiment, the codes that indicated whether the participant was in the ritual or control group were different in the raw data file than in the data file that was analyzed and reported in the article (Retraction of Tian et al. 2018). When the authors reanalyzed the data using the correct group codes, the significant finding that was reported in the article disappeared.

There were five other studies in the Allen Tian et al. (2018) article that were not mentioned in the retraction notice, and there are other published studies on the positive effects of rituals that have not been retracted. Of course, it is unclear whether those studies have been subjected to the same level of scrutiny as the two that have been retracted, but even if those other studies all hold up, my confidence in the potential positive effects of rituals has been shaken. I now think the evidence is murky at best, and if I ever publish a revised edition of my

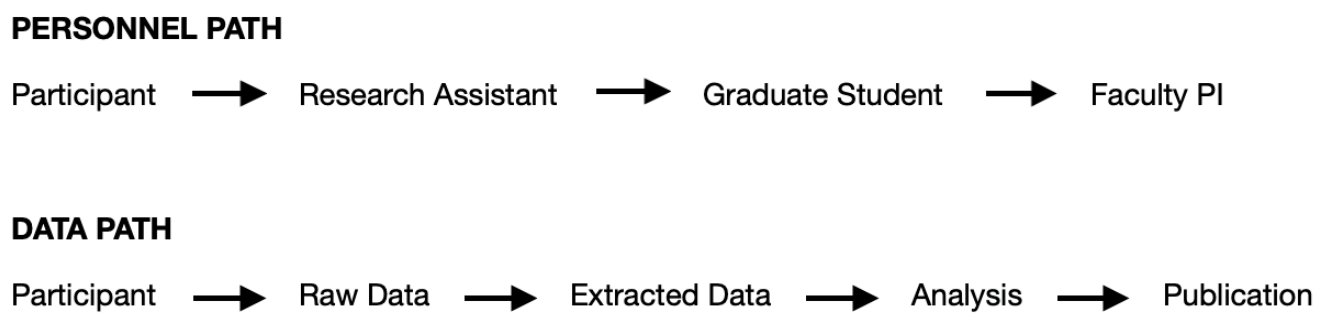

Figure 1. Common research process including the supervisory structure from participant to faculty principal investigator and the data's path from participant to published article.

book, I will likely change my discussion of this line of research or remove it entirely.

Something Ironic and Something Positive

A remarkable irony of this story involves the embattled Harvard psychologist Francesca Gino. As readers of this column will recall (Vyse 2024), Gino has been suspended from her job at Harvard for allegedly falsifying data in her published research and has sued the university for $25 million. Coincidentally, Gino was a coauthor on both retracted ritual articles. In fact, she has been a coauthor on a total of seven studies of the effects of rituals. But interestingly, Gino is not implicated in either of these retractions. In this case, the questionable activities involve other researchers, not Gino. Having said this, it seems likely that—but for Gino's troubles—the problems with these two ritual studies might not have been discovered. When data sleuths uncovered evidence of falsification of data in several of Gino's studies, her coauthors launched an effort to reexamine the results of all the studies they published with her (Parker and Song 2023). This turned out to be a big project because Gino has published 138 empirical articles with a total of 143 coauthors. I am speculating here, but it seems likely that, in the case of this ritual research, the reexamination of the data from studies coauthored by Gino revealed irregularities—not associated with Gino's work—but with that of her coauthors.

* * *

This is a sad story, but there are a few bright spots. Conducting large studies with many authors scattered among different universities means that one hand often doesn't know what the other is doing, and as a result people in different research groups need to be able to trust each other. In the case of the "Don't Stop Believing" study, it seems likely that, in some cases, that trust was violated. But it is also true that all the authors provided information for internal review, and once the review was completed, the authors approached the journal and asked to have the article retracted. The wording of the retraction statement for the Tian et al. (2018) study of rituals and self-control is a bit ambiguous, but it sounds like the authors did their own reanalysis and found the problem with the first study. They brought the problem to the attention of the journal editors and requested a "correction," but the ultimate result was the complete retraction of the article, to which the authors agreed.

This kind of behavior on the part of researchers is admirable. There are parts of this story that suggest less than admirable behavior, but I have avoided mentioning individual researchers by name because the people involved have not had the opportunity to publicly present their side of the story. The names are available for anyone who cares to look, but as I write this the episode is still quite new. Perhaps we will learn more later. In the meantime, until the evidence is clearer, this small-town boy has stopped believing in the psychological benefits of rituals. ■

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[THE PRACTICAL SKEPTIC MICK WEST

Mick West is a writer, investigator, and debunker who enjoys looking into the evidence behind conspiracy theories and strange phenomena and then explaining what is actually going on. He runs the Metabunk forum and is the author of the book *Escaping the Rabbit Hole*.

The Realm of the Ridiculous: From Election Fraud to UFOs

The day after the 2024 U.S. presidential election, an old conspiracy theory was given new life. With the figures available that day, Donald Trump had clearly won the popular vote with seventy-two million votes over Kamala Harris's sixty-seven million. Some people then pointed out that these numbers seemed *way* off when compared to the 2020 election between Joe Biden and Donald Trump. In that election, Biden got eighty-one million votes, and Trump got seventy-four million. It seemed that somehow, sixteen million votes had gone missing. To conspiracy theorists, this served as smoking-gun confirmation that the 2020 election had been rigged. They illustrated their concern with graphs like Figure 1.

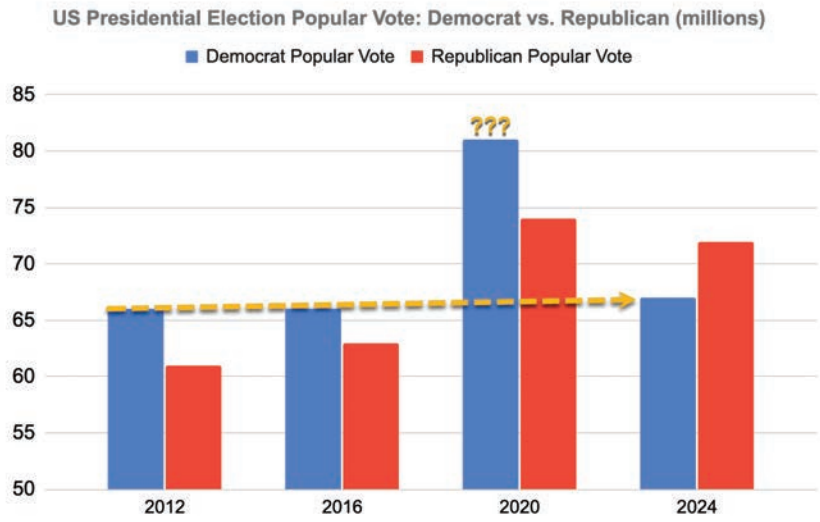


Figure 1: The deeply misleading graph using early vote counts in 2024 and actual vote counts in previous years.

The graph appears, on its face, damning evidence. The 2024 Democrat count is the same as in 2012 and 2016, and the eighty-one million of 2020 seems impossible. But it's not; the graph is misleading in several ways.

First, you might have already noticed a common trick: the vertical axis does not start at zero; instead, it starts at fifty. Because the longest bar is now only thirty-one, it makes all the differences seem over twice as significant as they actually are. Looking at the height of the columns, Biden's 2020 number seems almost 100 percent more than the 2024 number, when in reality it's only 25 percent more.

Second, we've got another common trick: cherry-picking a starting point. By avoiding 2008 and previous years, we miss out on valuable context about just how variable election turnout (and votes) have been historically.

These tricks confuse the matter, but the real issue here is more fundamental. *The 2024 numbers are wrong*. The numbers come from just a day or two after the election. Although many states do count their votes quite quickly, many other states do not. At the point reflected in the graph, only 90 percent of the votes had been counted. Fifteen million votes were still outstanding, and about ten million of them were in California, a state that was voting about 60 percent for Harris.

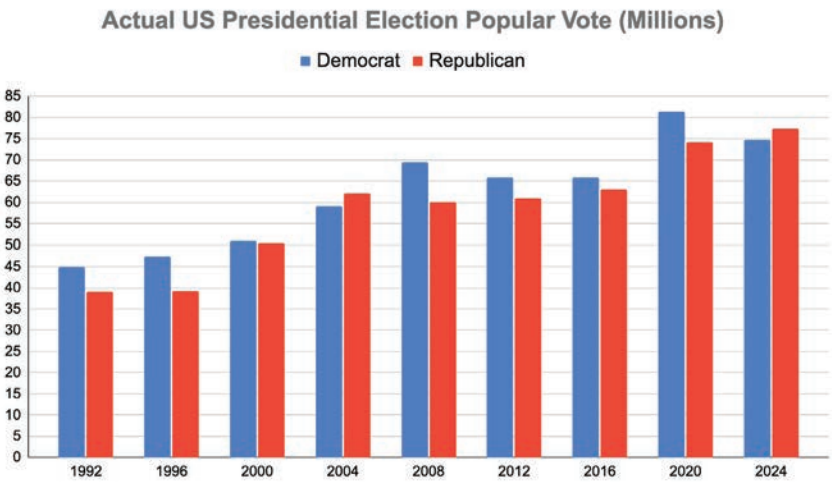


Figure 2: An accurate graph with final vote counts, a full range vertical axis, and more years for context.

If we put all this together, with the final vote tallies, the previous years for context, and the vertical scale starting at zero, we get a very different graph (Figure 2).

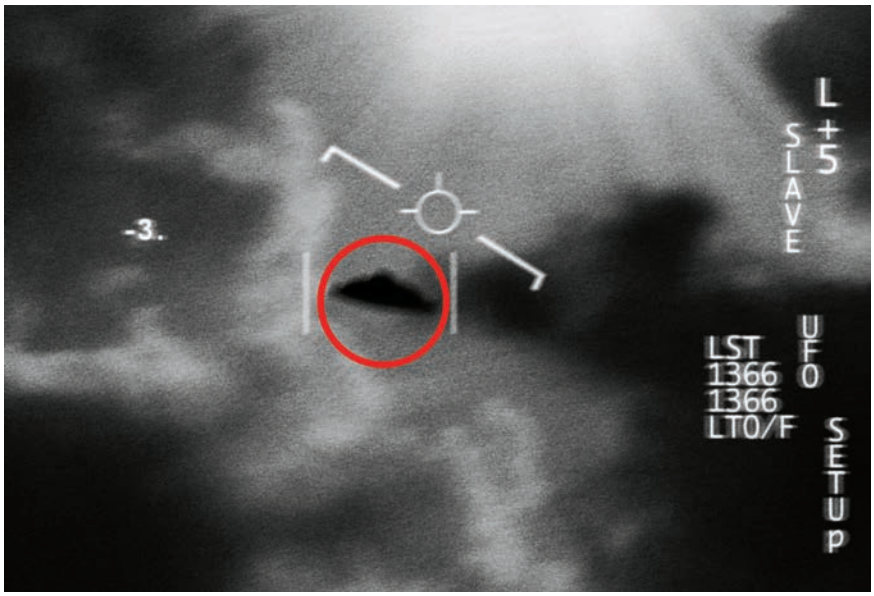
Now we see things in context. There's been a gradual rise in votes since 1992, with considerable variation from year to year. See, for example, 2004, where George W. Bush (R) beat John Kerry (D), and then the next election in 2008, a dramatic reversal, when Barack Obama (D) beat John McCain (R) by nearly ten million votes. (For non-American readers: American presidential elections are not determined by popular vote but rather by an "electoral college" of electors, where each state gets a fixed number of electors. This means a small number of "swing states" determine the election. In 2016, Hillary Clinton lost to Trump, even though she got nearly three million more popular votes than he did. In 2000, Al Gore got half a million more popular votes than George W. Bush, yet Bush became president by one electoral vote.)

When you see the difference between the two graphs, your reaction might be, "How ridiculous!" The deceit seems clear and obvious. How could anyone fall for such a thing? Why even bother to address it?

But that brings me to the broader point of this column. Claims that seem to us to be ridiculous are believed as fact by literally millions of people (and arguably, in some cases, billions). Yet scientists, journalists, and skeptics sometimes overlook those claims because they seem *too ridiculous*.

I started thinking about this idea a couple of years ago when I was investigating why the government was spending money on investigating UFOs. While there are valid reasons to try to identify what pilots are seeing, the official investigation seemed to have veered into speculations about the supernatural. Everything came back to a place called Skinwalker Ranch—a supposedly haunted place with interdimensional portals, werewolves, poltergeists, death ray orbs, and UFOs. The origin of the UFO investigation was rooted in a small number of people who believed that Skinwalker Ranch was supernatural.

I tried to get mainstream journalists to look at this for months. I'd bring it up each time they interviewed me. I'd write about it in several different places.



Skinwalker Ranch seemed to be the root cause of millions of dollars of government expenditure, but somehow, nobody wanted to look into it. As I said to UFO skeptic Steven Greenstreet, "It's almost like the topic has immunized itself against scrutiny by being too ridiculous to be scrutinized."

Being too ridiculous is a tactic, and it's one that works. Advance-fee scams are often made deliberately ridiculous. The idea that a Nigerian prince wants your help in exchange for millions of dollars if only you'll pay him a few thousand first is utterly ridiculous. But enough people fall for such scams to make them worthwhile. The ridiculous nature of the claim has a dual function, weeding out more sensible individuals who might see the con while also being obviously false so that it does not immediately seem in need of debunking.

Election fraud might appear, on the face of it, rather less ridiculous than UFOs. And yet something I've learned over the years of engaging with various proponents of conspiracy theories is that while individual theories can be placed on a spectrum, the theories themselves can be spread across that entire spectrum.

UFO conspiracy theories, of course, run the gamut from the government covering up secret projects to warring alien races pulling interdimensional strings from Zeta Reticula. But election fraud conspiracy theories, while seeming grounded in a plausible reality, have variants that are little less ridiculous.

Several were mentioned in the excellent HBO documentary *Stopping the Steal*. Told almost entirely by Republican officials, it tells the story of how Trump became surrounded by an odd bunch of election deniers and how ridiculous theories began to take hold in his circle.

One of the theories concerned German computer servers. A story arose that presidential election votes were being routed through a computer server owned by a Barcelona company called Scytl and that these servers were in Germany. The story rapidly grew when claims were made that an elite force of U.S. soldiers had stormed the German offices and seized the server.

This is, of course, utterly ridiculous. No state is going to use offshore servers to tabulate their votes. The American army is not going to invade offices in Germany. It makes no sense at all.

But being ridiculous is what let it spread. Eccentric Trump lawyer Sydney Powell said of the story, "That is true … but I do not know whether good guys got it or bad guys got it" (Swenson 2020), thus adding a new layer to the conspiracy. Was the server seized by the evil deep state or by patriots fighting for truth? Either way made no sense—but the extra layer of nonsense made the base premise seem a little more sensible by comparison.

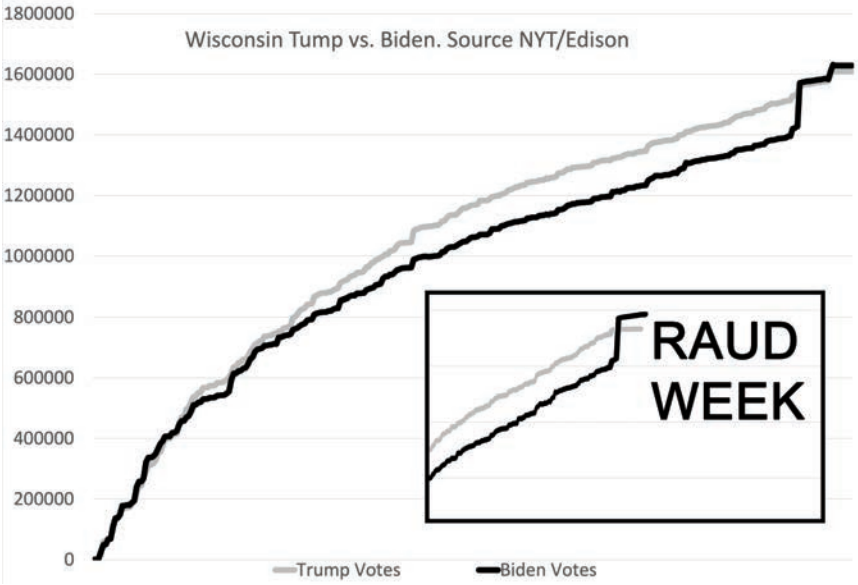


Figure 3: Strongly democrat inner-city precincts reporting their votes at the same time created the illusion of fraud in 2020.

An even more ridiculous theory was Italygate. This bizarre set of claims involved Italian satellites that were used to remotely hack voting machines and rumored to involve the Pope. When there were reports of an electrical blackout at the Vatican, hopeful conspiracists spun this as a police action that was simultaneously going to restore the lost votes and arrest the Pope for pedophilia. Of course, nothing happened, not even the blackout (Lanzavecchia 2021).

Ridiculous conspiracy theories that are "too ridiculous to be scrutinized" escape sufficient scrutiny and never really die. Years later, they will crop up again. As I wrote in my article titled "Skeptical Recurrence and Decay" (SI, September/October 2022), the recurrence of conspiracy theories can be cyclic. Theories about 9/11 crop up every September, and election conspiracies every four years.

The old conspiracy theory that's being repeated here is that Biden's eighty-one million votes in 2020 were simply too much. We can see from the wider scale graphs that it was nothing out of line with historical variations. However, because there was no neat explanation of this available, it was very easy to revive this theory and simply make the eighty-one million look suspicious again by making a misleading graph with the wrong figures.

It's not simply this one theory that's been revived. Another hard-to-kill theory is the "ballot-dumps" idea, where somehow truckloads of ballots were injected into the process in the middle of the night. This was illustrated by a graph of election results showing Trump leading, followed by Biden suddenly overtaking (Figure 3).

This is a graph of actual election results from Wisconsin. The inner-city precincts were all heavily Democratic (over 90 percent in some areas), so when they reported their absentee ballot results all at once, there was an expected large jump for Biden and a small one for Trump. However, the graph was displayed with Biden's line behind Trump's, making it look like Trump got zero votes. This was later modified even more, with the crossed lines used to form an "F" in "Fraud." This became a popular meme.

Of course, when there were similar events in 2024, the exact same claims were repeated. On November 11, 2024, it cropped up again, with the Wisconsin 2024 figures, but this time for the Senate race (which Democrats won). A few days later, Reuters did a quick fact-check, but by then the damage was done (Reuters Fact Check 2024).

How Skeptics Can Help

Skepticism occupies a useful position here. We are often the people who will scrutinize topics that the mainstream media and scientists deem too ridiculous to be scrutinized. But even within skepticism, there are issues of demarcation. Where skeptics should draw the line on ridiculous topics they should address varies greatly by individuals and their personal priorities.

Daniel Loxton wrote eloquently about this issue, noting that Bigfoot was considered a too-ridiculous topic, and yet it is something that twenty-three million Americans believe exists. Loxton concluded: "[It is not] a problem that we emphasize topics that other people find uninteresting. That's *our most useful contribution*" (emphasis in original; Loxton 2016).

Skeptics are an odd bunch of people. We often got into skepticism for personal reasons—because we saw some skeptical writing or podcast that spoke directly to a topic we were interested in. In some cases, the topic was religion and a reaction to childhood indoctrination. More generally, it can be a reaction to finding something you once thought was true is actually false. On top of that, there is to varying degrees a love of science and reason.

This all makes for a diverse group. While that diversity can lead to disagreements within the skeptical community, it is also our greatest strength. The mainstream might find things too ridiculous, but I hope there's a skeptic somewhere who will take a look. ■

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[INSIDE IMMUNITY ANDREA LOVE

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mRNA Vaccines Aren't Gene Therapy, but Gene Therapy Is Nothing to Fear

Editor's note: We're thrilled to welcome Andrea Love, PhD, as a print columnist for Skeptical Inquirer! Love first began this column through our website in April 2024, and now we'll also be able to enjoy her insights about health, immunology, and microbiology in these pages. To read her additional online exclusives, search for her name at skepticalinquirer.org/s.

It's been five years since SARS-CoV-2 became a global pandemic—and just as importantly, five years since the deployment of the first FDA-approved mRNA-based vaccine. This innovation is rightfully lauded as the next era in biotechnology and novel therapeutic development as evidenced by Katalin Karikó and Drew Weissman's 2023 Nobel Prize in Medicine (Karikó et al. 2005). Unfortunately, that very same scientific innovation has marked COVID-19 vaccines as a nefarious plot by the government, Big Pharma, and all us brainwashed scientists who worked behind the scenes to study this new virus and develop these lifesaving vaccines.

Disinformation about COVID-19 vaccines echoed familiar false refrains about "harmful ingredients," dangerous side effects, the supposed inferiority of vaccine-mediated immunity compared to natural immunity, and the purported lack of safety testing. But the advent of mRNA vaccines brought new accusations too, including the claim COVID-19 vaccines were untested "gene therapy."

Much of the COVID-19 vaccine disinformation was fueled by politicization, with claims that mRNA vaccines were "harmful gene therapy" accelerating because of fundamental gaps in knowledge about molecular biology, colloquial misuse of the term *gene* even by those with good intentions, and anti-science and medical conspiracism more broadly.

Vaccines Have Evolved over 300 Years—and That's a Good Thing

Vaccines are tools that train our immune system to recognize and respond to a pathogen without exposing us to the disease-causing microorganism. Vaccines deliver molecules that activate our immune system, called antigens, that lead to the generation of memory immunity. When we encounter the actual pathogen in the future, that immune memory enables us to mount a rapid and effective response, limiting disease severity and preventing death.

Antigens take many forms, but when it comes to infectious diseases, they are commonly proteins or polysaccharides (carbohydrates) displayed on the outside of a microorganism because that location means direct interaction with immune cells in our body.

Vaccine science has evolved substantially from the crude inoculations of live pathogens 300 years ago to the refined formulations we have today (Pollard and Bijker 2021). Through scientific research and development, different formulations of vaccines have been developed, each balancing the ability to elicit that immune response with the feasibility of manufacture. Today, vaccine technologies include:

- Attenuated vaccines (using a weakened form of the pathogen)
- Inactivated vaccines (using a killed pathogen)
- Subunit vaccines (using only specific antigenic components of the pathogen)
- Toxoid vaccines (using inactivated toxins from the pathogen)

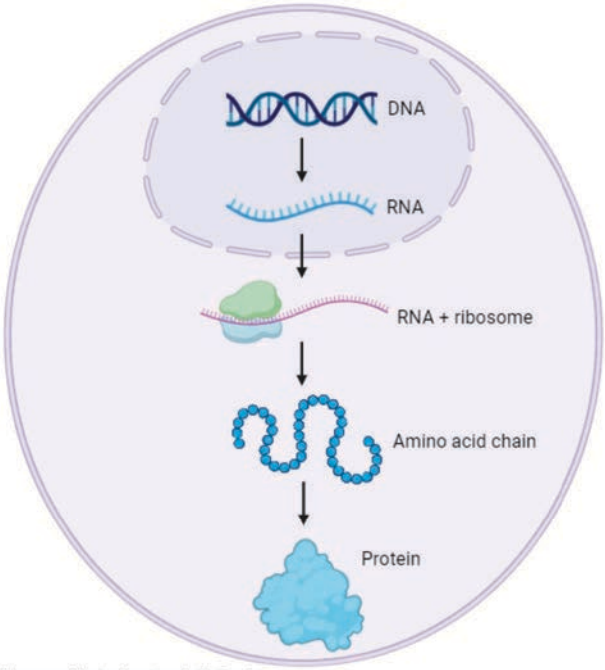
We can now add mRNA vaccines, the newest chapter in vaccinology, to that list. mRNA isn't an antigen directly but rather the blueprint for our cells to produce antigen themselves.

What Is mRNA Anyway?

A gene is a segment of a DNA molecule that has multiple regions, including a promoter, exons (the bits that dictate sequence of amino acids in a protein), introns, and terminator regions. Genes are blueprints for making proteins or other functional molecules. Every chromosome we have (and other eukaryotic organisms) contains many genes. For eukaryotes, all our DNA—all our genes—lives in the nucleus of each of our cells.

To send the messages for which genes need to be expressed, DNA must be converted into something that can leave the nucleus. Enter mRNA, short for messenger RNA, a molecule identified in 1961. mRNA is not a gene; it is a transcript. That is, mRNA is a temporary copy of a specific DNA sequence that is transported out of the nucleus and designated to be used by our ribosomes, which converts it into a functional protein (Crick 1970). mRNA is a short-lived intermediate that is used as a message relay signal. After it is read by ribosomes and used to string up a chain of amino acids to become a protein, it rapidly degrades.

COVID-19 mRNA vaccines use an mRNA that is the template for the spike protein of SARS-CoV-2, a protein on the virus that serves as an antigen. Unlike a vaccine directly delivering manufactured spike



Graphic created by Andrea Love in BioRender

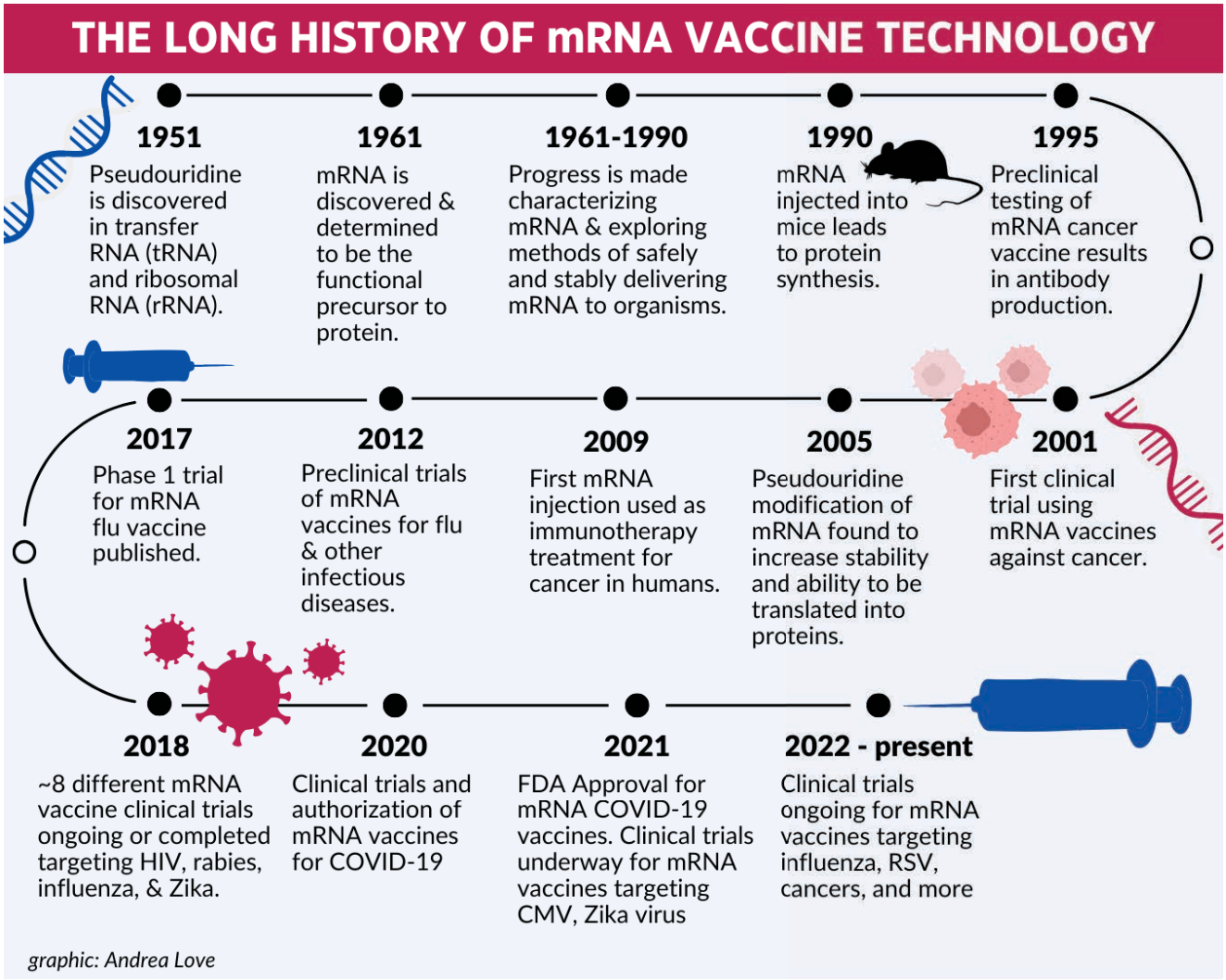
protein, mRNA vaccines merely contain the blueprint for the spike protein. Upon vaccination, our cells take up the mRNA, produce spike protein, and present it to the immune system. This causes the immune system to flag that protein as foreign and generate memory immunity—without ever exposing the body to any significant components of the virus itself (Rando et al. 2023; Pardi et al. 2020).

mRNA is one degree removed from the antigen our immune system would recognize, but because our cells abide by the central dogma of molecular biology, they read that mRNA segment and synthesize protein from it. This technology is incredibly elegant and has been in research and development for over thirty years (Dolgin 2021).

While many people cast doubt on mRNA vaccines because they are a newer vaccine technology than others, it should be viewed as what it is: the advancement of science with increasing knowledge. If we all took the attitude of dismissing newer—and improved—technologies, we would still be snorting dried smallpox scabs up our noses (Needham 1980; Boylston 2012)!

mRNA Vaccines Aren't Gene Therapy because mRNA Isn't a Gene

The misconception that mRNA vaccines are "gene therapy"


THE LONG HISTORY OF mRNA VACCINE TECHNOLOGY
1951
Pseudouridine is discovered in transfer RNA (tRNA) and ribosomal RNA (rRNA).
1961
mRNA is discovered & determined to be the functional precursor to protein.
1961-1990
Progress is made characterizing mRNA & exploring methods of safely and stably delivering mRNA to organisms.
1990
mRNA injected into mice leads to protein synthesis.
1995
Preclinical testing of mRNA cancer vaccine results in antibody production.
2001
First clinical trial using mRNA vaccines against cancer.
2005
Pseudouridine modification of mRNA found to increase stability and ability to be translated into proteins.
2009
First mRNA injection used as immunotherapy treatment for cancer in humans.
2012
Preclinical trials of mRNA vaccines for flu & other infectious diseases.
2017
Phase 1 trial for mRNA flu vaccine published.
2018
~8 different mRNA vaccine clinical trials ongoing or completed targeting HIV, rabies, influenza, & Zika.
2020
Clinical trials and authorization of mRNA vaccines for COVID-19
2021
FDA Approval for mRNA COVID-19 vaccines. Clinical trials underway for mRNA vaccines targeting CMV, Zika virus
2022 - present
Clinical trials ongoing for mRNA vaccines targeting influenza, RSV, cancers, and more
graphic: Andrea Love

comes from a combination of factors, but I would say there are two main drivers.

The first exploits a fundamental lack of knowledge about molecular biology by people who are intentionally trying to undermine COVID-19 vaccines. These people repeat claims that suggest these vaccines—and gene therapy—are tactics to control the population, to "alter our genetics," and to make people transhuman. While none of these has any basis in reality, the goal is to erode trust in scientific institutions and federal agencies, a common ploy of those who propagate medical conspiracism (Oliver and Wood 2014).

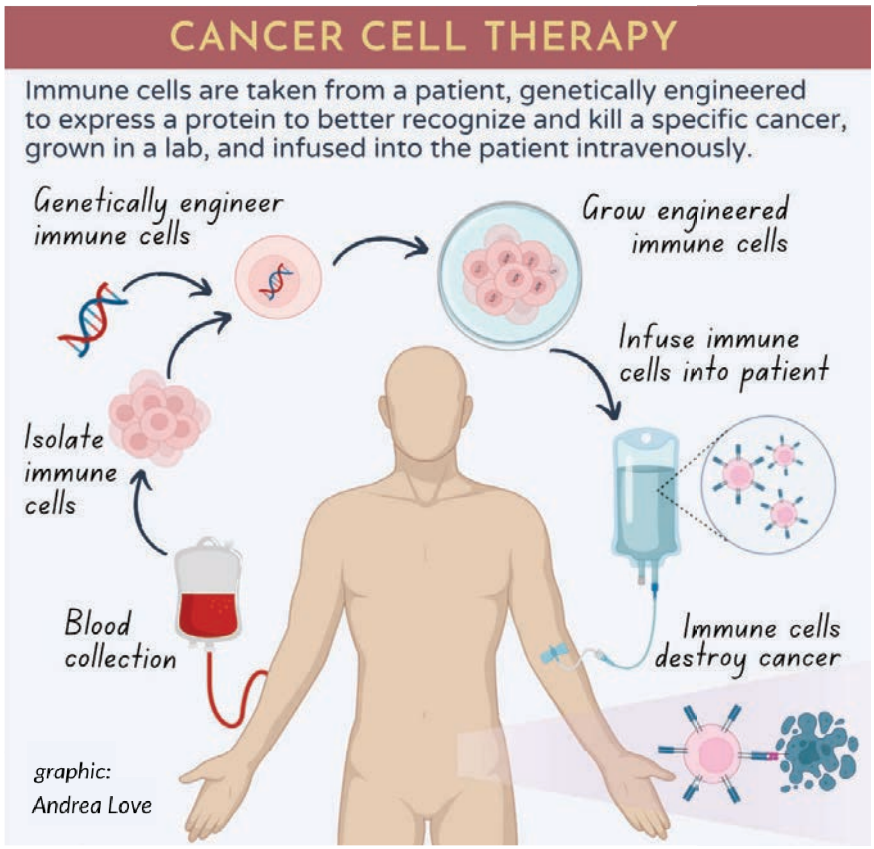
The second resulted from colloquial misapplication of the word *gene*, even coming from well-intentioned scientists trying to simplify complicated science at a time when people were bombarded with clickbait headlines, uncertainty, and disinformation.

In biomedical science, we often casually refer to anything related to genetic material as *genes*, even when it isn't scientifically accurate. It's a shorthand way of referring to a gene product, because those of us in the field have a deep understanding that a gene *transcript* (the mRNA) originates from the *gene* itself (the DNA). Unfortunately, if this critical distinction isn't explained properly, it can mean even an innocent statement (simplified to limit confusion with even more molecular biology) gets conflated and weaponized. People looking to spread disinformation about vaccines will grasp anything they can to drive misinformation campaigns—and that's even more true when concepts about genetics and genes come into play.

Gene Therapy Isn't Something to Fear Either

Gene therapy is a catchall term for therapeutic interventions that aim to alter, repair, or replace a gene (DNA) to treat or cure diseases that result from defective genes. Gene therapies involve modifying, silencing, or replacing DNA segments, which reside in the nucleus of target cells.

mRNA vaccines don't do this. mRNA doesn't enter the nucleus of the cell, where our genes reside. Our cells are compartmentalized and cellular functions have directionality, so mRNA in a vaccine doesn't travel *into* the nucleus of a cell where it could interact with our genes. mRNA, whether in a vaccine or produced naturally by our cells, is a temporary instruction for ribosomes to produce proteins.


CANCER CELL THERAPY
Immune cells are taken from a patient, genetically engineered to express a protein to better recognize and kill a specific cancer, grown in a lab, and infused into the patient intravenously.
Genetically engineer immune cells
Grow engineered immune cells
Infuse immune cells into patient
Isolate immune cells
Blood collection
Immune cells destroy cancer
graphic: Andrea Love

Gene Therapy Is a Revolutionary Biotechnology That Can Treat the Untreatable

During the COVID-19 pandemic, anti-vaccine activists painted mRNA vaccines as gene therapy to insinuate they were harmful. Well, COVID-19 vaccines aren't harmful; they are estimated to have saved tens of millions of lives globally. Neither is gene therapy harmful. They just aren't one and the same.

Gene therapy is a life-changing therapeutic field that is allowing us to treat diseases previously considered incurable. Gene therapies can provide long-term or permanent corrections to genes that cause chronic or fatal diseases. Many of these diseases are inherited, have no therapeutic options, and current treatments merely alleviate symptoms or modestly slow disease progression. Gene therapies can deliver the corrected gene directly, or we can alter genes within certain cells to combat a disease.

The very first FDA-approved gene therapy was in August 2017 for treatment of B-cell acute lymphoblastic leukemia (B-ALL). Kymriah (tisagenlecleucel) is a gene therapy that introduces a gene into T cells to produce a protein that binds an antigen on B cells (which are cancerous in B-ALL). These gene-modified cells, CAR (chimeric antigen receptor) T cells, can now target and destroy those B cells, treating the leukemia (Maude et al. 2018).

That same year, the first gene therapy for a genetic disease was also FDA-approved. Luxturna (voretigene neparvovec-rzyl) was approved in December 2017 for inherited pediatric blindness due to RPE65-associated retinal dystrophy.

I'll give you one guess as to which gene is involved! That's right, RPE65. RPE65 produces an enzyme, retinoid isomerohydrolase, that converts vitamin A into retinal, which is essential for detecting light in retinal cells. With a defective RPE65 gene, you don't produce the enzyme, the conversion doesn't occur, and light isn't detected. This causes vision loss that worsens over time.

Luxturna replaces that defective RPE65 gene with a functioning one through a subretinal injection (yep, in the eyeball). When the functioning RPE65 gene is delivered, your eye cells can produce the enzyme, and

vision can be restored (Russell et al. 2017).

Pretty incredible, right?

In the seven years since, around forty gene therapies have been FDA approved for an array of diseases from rare pediatric neurodegenerative disorders, pediatric blindness, cancers, and hematologic diseases. We have treatments for conditions such as spinal muscular atrophy (SMA), sickle cell disease, hemophilia A, beta-thalassemia, Duchenne muscular dystrophy (DMD), multiple myeloma, B cell lymphoma, and more.

Many genetic diseases are not only rare but fatal. Because they're frequently inherited, they often disproportionately impact children or certain ethnicities. Gene therapy is a new era in therapies for conditions that were once untreatable, many of which impact marginalized populations.

While the term *gene therapy* may connote fear, this is often because of misunderstanding about the science and disinformation that started in the 1990s, when claims alleged gene therapy would "rewrite your entire genome." The reality is these treatments are rigorously studied, monitored, and are targeted specifically to the defective gene.

mRNA Vaccines and Gene Therapy Are Biotechnology Advances That Should Be Celebrated

mRNA vaccines and gene therapies are both incredible advancements in science and medicine. Their development and therapeutic successes underscore the scientific method: harnessing the continued accrual of knowledge and technology to innovate and improve health outcomes. The COVID-19 pandemic illustrated the potential of mRNA vaccines. Clinical trials are underway for cancers, HIV, malaria, and more. Gene therapy research and development continue to target currently incurable diseases such as cystic fibrosis, muscular dystrophy, and more.

While mRNA vaccines are not gene therapy, fear around both classes of therapeutic innovations is rooted in misinformation, not science. Both represent scientific developments that are the result of embracing progress. These tools can shape the future of medicine—and human health—so long as we don't let misinformation get in the way. ■

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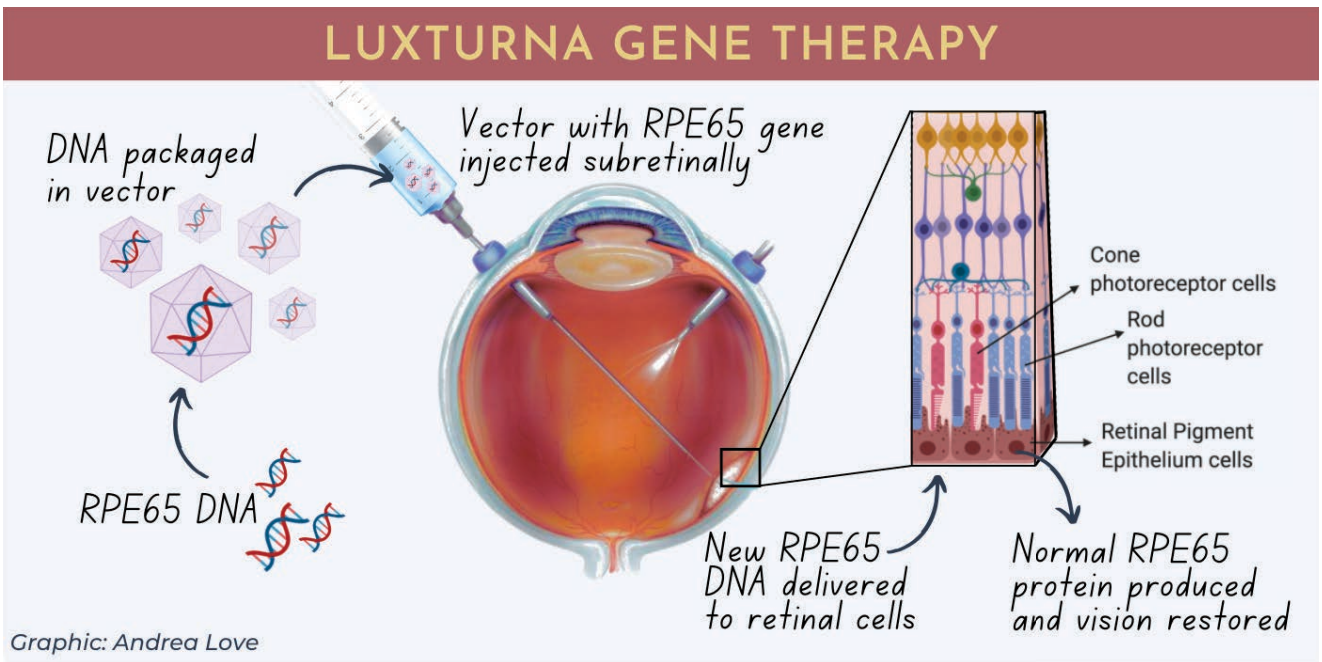
LUXTURNA GENE THERAPY
DNA packaged in vector
Vector with RPE65 gene injected subretinally
Cone photoreceptor cells
Rod photoreceptor cells
Retinal Pigment Epithelium cells
RPE65 DNA
New RPE65 DNA delivered to retinal cells
Normal RPE65 protein produced and vision restored

Graphic: Andrea Love

[SKEPTICAL INQUIREE BENJAMIN RADFORD

Benjamin Radford is a research fellow at the Committee for Skeptical Inquiry and author or coauthor of fourteen books, including *America the Fearful: Media and the Marketing of National Panics*.

The Case of the Sketchy Study about Authentic Art

Q: **What do you make of this recent study proving that seeing real art stimulates different parts of the brain than seeing reproductions?**

—Devon Z.

A: In fall 2024, a viral news story described cutting-edge neuroscientific research validating what most people already knew: That seeing an original work of art is more powerful and meaningful than seeing a reproduction of that work. Several people asked my thoughts on it—not because it was dubious or an extraordinary claim but instead because we share an interest in art.

The study was widely reported—often cribbed directly from the press release—in mainstream news media, including *The Guardian*, *The Art Newspaper*, *Smithsonian*, and many others. What made the research especially notable was the use of brain imaging tools as validating metrics. Typical headlines included "Real Art in Museums Stimulates Brain Much More than Reprints, Study Finds" and "Seeing Vermeer's 'Girl With a Pearl Earring' In Person Stimulates the Brain More Than Looking at Reprints, Study Suggests."

The information read, in part:

> Neurological research has shown that looking at a real painting at the Mauritshuis [Museum in Den Haag, Netherlands] activates the brain differently than looking at a reproduction of the same painting. The viewer's emotional response is ten times stronger when they are face to face with the painting in the museum. Researchers used electroencephalograms to reveal that real artworks, including Girl with a Pearl Earring, elicit a powerful positive response much greater than the response to reproductions …
>
> The study was performed in two phases. First, ten individuals wearing EEG headsets and eye trackers followed a certain route round the Mauritshuis, which included the Girl and four other paintings from the collection. The same ten test subjects were then shown three reproductions of the paintings in the Maurithuis library, again wearing an EEG headset and eye tracker. Ten other test subjects did the same, but looked at the reproductions first and then went round the museum. In phase two of the study, a "functional MRI" brain scan was performed on twenty respondents at the University of Amsterdam. During the scan, the test subjects were shown reproductions of the five paintings from the Mauritshuis. Five subjects participated in both phases of the study.
>
> The Mauritshuis commissioned the study from Neurofactor, which took responsibility for the research itself. The museum had stipulated that the study must be scientifically sound, so Neurofactor brought in Neurensics, an independent consumer neuroscience research agency. Professor Victor Lamme, Dr. H. Steven Scholte and Andries van der Leij (co-owners of Neurensics) are responsible for the scientific reliability of all the company's research, and they also teach at the University of Amsterdam. Liselore Tissen (Leiden University, TU Delft, Royal Netherlands Academy of Arts and Sciences) advised the team as an independent external scientist. (Mauritshuis Museum 2024)

The full article and press release is too lengthy to quote in full but can be found at the Mauritshuis Museum website.

I also took the information at face value; after all, it made perfect sense, and one of the pleasures of my life is visiting art museums around the world to see original art. But as a skeptic, I am always on the lookout for confirmation bias: We tend to see, endorse, and believe information that supports our assumptions while ignoring or rejecting information that contradicts them. For that reason, we should routinely question our own assumptions.

A few red flags went up for me as I skimmed the news articles searching for where the study was published. The social media posts, news articles, and press releases leaned heavily into the neuroscience aspects of the study, and there are many quality, peer-reviewed medical, perceptual, and psychological journals where this research could have appeared—yet none were mentioned. The fact that the Mauritshuis Museum commissioned the study was a bit of a red flag as well, especially because the artworks used in the study—most prominently Johannes Vermeer's *Girl with a Pearl Earring*—all came from that museum's collection.

Museums News
Yesterday at 12:40 AM ·
Neurological research has shown that looking at the real painting of 'Girl with a Pearl Earring' at the Mauritshuis Museum activates the brain differently than looking at a reproduction of the same painting.
The viewer's emotional response is ten times stronger when they are face to face with the painting in the museum. Researchers used electroencephalograms (EEGs) to reveal that real artworks, including Girl with a Pearl Earring, elicit a powerful positive response much grea... See more

A Facebook post by *Museums News* highlighting the Mauritshuis study

The blending of science and advertising is, of course, neither new nor malignant. The results of countless legitimate neuroscience research studies have been spun (usually by university public relations departments) into press releases and news articles, and countless promotional press releases have been anchored in published medical and neuroscience research. But the Mauritshuis went out of its way to highlight the validity of this research, stating explicitly that it "had stipulated that the study must be scientifically sound." So, I took a closer look.

Research Design 101

As noted, at first glance this research looks impressive; it had different groups of people exposed to different conditions, and it used brain imaging technology. We have several sets of variables in this research: a piece of original art and a reproduction of that art, and a museum exhibition setting and non-gallery (e.g., library or gift shop) setting. Though the sample size was small (twenty people per condition), that may be a sufficiently large sample given time and funding constraints. So far so good.[1]

But problematically—and, arguably, fatally—the study was not blinded; the subjects knew full well whether they were looking at an original or a reproduction. Thus, the researchers didn't have a valid control group. To accurately study this, you'd need to control for confounding factors, including image quality and psychological priming. Because the subjects knew they were looking at a poster of inferior quality to the original, it's not surprising that the original would stimulate more brain activity. The psychological context of standing right in front of an original masterpiece in a museum is very different than standing in a library looking at a print.

Also, unlike a natural diamond stone, which is indistinguishable by the naked eye from a manufactured diamond or even a cubic zirconia, original art (and oil paintings in particular) often look very different from their reproductions. Much art looks different from different distances and angles (e.g., pointillist art), while a printed image suffers from many sources of degradation—from the skill of the photographer to the quality and age of inks to the color and stock of the printed substrate.

It wasn't clear from the articles and press release what, exactly, was found. Some mentioned that "different parts of the brain" were stimulated, while others said that the response to original art was "ten times" that of the response to reproductions. The factor of ten is a nice, round, meme-friendly number—but ten times what? What does a "more powerful response" (or "much greater 'pull' in real life") mean? It's not clear; it may simply mean that respondents spent more time looking at the originals than at reproductions—which would be completely expected because the originals have lavish details (such as brushstrokes and flecks of color) that the human eye can easily discern but that are lost in even the best photographic reproductions. Furthermore, the sub-

1. In this column, I focus on the main (real vs. reproduction) finding, though there was a secondary conclusion. From the press release: "Another striking outcome of the study is the fact that, when someone looks at the Girl, it is the precuneus that is by far the most stimulated part of their brain. The precuneus is involved in one's sense of self, self-reflection and episodic memories."

Smithsonian
MAGAZINE

SMART NEWS

Art Meets Science

Seeing Vermeer's 'Girl With a Pearl Earring' in Person Stimulates the Brain More Than Looking at Reprints, Study Suggests

Scientists used EEG headsets, MRI machines and eye trackers to study volunteers' responses to five paintings housed at the Mauritshuis museum in the Netherlands

Olatunji Osho-Williams
Staff Contributor
October 11, 2024

An article on the Smithsonian website based on a press release from the Mauritshuis.

jects may have taken more time with the originals due simply to differences in lighting; museums have carefully controlled lighting to minimize pigment degradation from light (this is why flash photography is prohibited). Lower light requires more time and attention from the viewer to see details that would be easier to see in greater light.

A more rigorous study might have found ways to rule out these confounders, for example by displaying reproductions alongside originals or adding brushstrokes to the reproductions to give the illusion of authenticity. Or put the real painting in a non-museum setting under identical lighting where participants would assume it's a reproduction (or possibly done by a student of the Master[2]).

Neurensics

I took a closer look at the company that conducted the research. A review of the Neurensics website reveals a "consumer neuroscience" company offering many services, including advertising, consulting, public relations, marketing, packaging testing, and the like. As their name suggests, neuroscience is key to their branding, including using the results of functional magnetic resonance imaging and electroencephalography. They also use something called the rapid implicit association task, which seems to be a version of the implicit association task, a widely used reaction time test in social psychology. The measure—reaction time to a given stimulus—is pretty straightforward, but the interpretations of the data are far less validated. Did a person take longer to click on an image of a popular brand logo because it was less familiar, or because the font is harder to read, or because he or she prefers a different brand, or some other reason? The same issues are inherent with eye-tracking technology used in this study and others: it can tell us what parts of a painting or advertisement a person looked at longer—perhaps even by milliseconds and without them knowing it—but not necessarily why. You can, of course, conceptualize "pull" or "attention" in such a way that looking at an image longer means being more "pulled" to it (or "emotionally engaged," etc.), but that's only one of several possible interpretations.

The point is not that the research methods Neurensics used in this study (or others more broadly) are necessarily invalid or inherently flawed but instead that their research is driven less by scientific rigor than promotion. They make money by using technology with the promise of increasing advertising effectiveness, consumer branding, and so on. Their research doesn't need to be valid enough to pass peer-reviewed muster, just good enough to convince the head of marketing at PepsiCo that they can predict whether Turkish consumers will tolerate an increase of .25 lira in the price of Lay's potato chips (an actual client case study) and whether that can be more accurately determined by a questionnaire (consciously) or an EEG reading (unconsciously).

Conducting valid scientific research is very, very difficult, time-consuming, and expensive. It is perfectly understandable that the Mauritshuis would hire a company such as Neurensics to study this, with an eye toward highlighting its amazing art collection and the value of seeing it in person. Where this went slightly off the rails was in emphasizing the study's scientific validity (though the lack of skeptical commentary in news articles was disappointing). At the end of the day, of course, a respected Dutch art museum ginning up some attention and publicity based on a poorly validated, sciencey study is hardly a social harm.

In fact, the study's conclusions are almost certainly correct: It's very likely that seeing real art does, in fact, stimulate the brain more than seeing reproductions, for the same reason that hearing a musician perform a song live stimulates more of the brain than simply hearing that song played on the radio. Martine Gosselink, director of the Mauritshuis, is among those quoted on the museum's website about this study: "We see reproductions of famous paintings everywhere, particularly Vermeer's Girl with a Pearl Earring. This study has shown once and for all that a visit to the Mauritshuis or another museum has much greater emotional value." This study didn't "show it,"—much less "once and for all"—but she's right to encourage people to see originals whenever possible. ■

Reference

Mauritshuis Museum. 2024. Girl with a Pearl Earring visually captivates the viewer: Mauritshuis presents results of neuro research (press release, October 2). Online at https://www.mauritshuis.nl/en/press-releases/girl-with-a-pearl-earring-visually-captivates-the-viewer/.

2. There are many other potential confounding factors and biases that don't seem to have been controlled for, including demand characteristics/acquiescence bias, primacy bias, confirmation bias, framing, and others. The fact that the marquee painting is one of Vermeer's most famous—and the subject of the best-selling novel and Academy Award–nominated 2003 film of the same name starring Scarlett Johanssen and Colin Firth—might plausibly play a role in how long people look at it. Like the *Mona Lisa*, *The Scream*, and countless other famous paintings, the art's reputation precedes—and thus influences—perceptions about it. Patrons might spend extra time looking at nuances of the painting trying to divine what all the fuss is about.

Harry Houdini Debunked Claims of Abraham Lincoln's Spiritualism

Abraham Lincoln was not a Spiritualist, but he has been claimed as one for over 150 years. In the 1920s, Lincoln's only living son refuted the charge, as did renowned illusionist Harry Houdini.

JASON EMERSON

The evidence of Abraham Lincoln's supposed belief in Spiritualism includes his attendance at séances, his alleged professions of belief to other believers, and "eyewitness" accounts of him asking (and listening to) the spirits' advice on the conduct of the Civil War. Lincoln as Spiritualist gained public attention first from an 1863 newspaper article, then exploded due to an 1891 book by a self-professed psychic who held séances for the Lincolns in the White House, and culminated in the 1920s based mainly on the existence of a "spirit photo" of Mary Lincoln with her husband's ghost standing behind her.

Whether or not Lincoln was a Spiritualist did not matter to the average person, but to Spiritualists it was the proof and gravitas their religion needed to become accepted and proselytized throughout the world. As one New York editorialist wrote, "If it could be proven that Abraham Lincoln was in any way connected with Spiritualism, or did take counsel from any mediums, at a time when the nation's weal or woe hung in the balance, or was in any manner governed by such counsel, it would be the literary event of the nineteenth century, and the most astonishing statement of modern times" (Maynard 1891).

No serious historian or student of history today believes that Abraham Lincoln communicated with ghosts or attended séances for anything more than a few hours' entertainment and distraction from the Civil War. Yet the claims he was an ardent Spiritualist and believer in the popular pseudo-religion continue to this day.

Attendance at Séances

Modern Spiritualism began in 1848 in Hydesville, New York, when sisters Margaret (Maggie) and Catherine (Kate) Fox, ages fourteen and eleven, respectively, began to hear strange noises in their bedroom. The girls claimed that the spirit of a murdered peddler was communicating with them through its knocks and raps on the walls. Ultimately, the sisters claimed they could communicate with any spirits through a system of interpreting the noises, and people came from miles around to the Fox homestead to witness the phenomenon and talk to their deceased relatives. The girls' older sister, Leah, ultimately took charge of her siblings and toured them throughout the United States, having them hold public demonstrations and mediumistic séances—and making a significant amount of money (White 2016). Unsurprisingly, dozens of imitators quickly joined in the craze and declared themselves Spiritualists and psychic mediums; the general public clamored for sittings, messages, and communications with their dearly departed.

By the 1860s and with the high death toll of the Civil War, the movement boomed when bereaved and distraught people flocked to a religion that allowed them to communicate with their dead soldiers. Séances became a popular and lucrative business, while the psychic mediums who presided over them became veritable celebrities. To those who did not believe in Spiritualism, the "religion" was nothing more than a farce practiced by charlatans and criminals who sought to enrich themselves by preying on the gullible and the bereaved.

This was, in fact, the way in which Abraham Lincoln became associated with the religion—not through his own actions but by supporting his emotionally devastated wife, Mary. It was she, and not her husband, who was the Spiritualist in the Lincoln family. Her belief has many supposed start dates, but its true beginning was likely in February 1862, after the death of Willie, the Lincolns' eleven-year-old son, who died from typhoid fever in the White House. Mary associated with many Spiritualists during the White House years, including her dressmaker Elizabeth Keckley, Union General Daniel Sickles, and Secretary of War Gideon Welles and his wife. But it was family friend Dr. Anson G. Henry who claimed credit for converting the first lady to the Spiritualist religion. "I am a half-way Spiritualist," Henry wrote his wife on May 8, 1865, shortly after President Lincoln's assassination. "That is I believe our departed friends hover around and are fully cognizant of all that transverses while we are not sensible to their presence. I have made Mrs. L a convert to this doctrine" (Anson G. Henry Papers n.d.). Mary herself wrote two months later, on July 4, 1865, to her friend Senator Charles Sumner, "My belief, is so assured, that *Death*, is only a blessed transition, to the 'pure of heart,' that a slight veil separates us, from the 'loved and lost,' and to me, there is comfort, in the thought, that though unseen by us, they are very near" (Turner and Turner 1972).

During the White House years, Mary Lincoln attended multiple séances, both in the White House and at other locations. And Abraham Lincoln joined her on more than one of these occasions. A newspaper reported in April 1863 that

Houdini manufactured this "spirit photo" of Abraham Lincoln watching the magician perform an escape as proof that spirit photos are fake and can be made by any amateur photographer. Image courtesy Abraham Lincoln Presidential Library, Springfield, Illinois.

the Lincolns held a séance in the White House. During the event, medium Charles E. Shockle reportedly channeled the spirit of Henry Knox, first secretary of war, who said he had been discussing the Civil War with George Washington, the Marquis de Lafayette, Napoleon Bonaparte, and others, and offered Lincoln advice on running the war. By the end of the evening, Lincoln declared, "Well, Mr. Shockle, I have seen strange things and heard rather odd remarks, but nothing which convinces me … that there is anything very heavenly about all this" ("President Lincoln Has …" 1863).

General Daniel Sickles, who was a friend of the Lincolns and attended séances in the White House, later told an interviewer that "Mrs. Lincoln was a devoted believer in Spiritualism, and it was to please his wife that Lincoln, in the kindness of his great heart, attended those gatherings." Sickles said the president "chafed" at his wife's beliefs and "made sport of it." For example, Sickles once saw the president recreate an event in which a medium claimed to play the piano perfectly without training, all while the piano jumped up and down through the force of the spirits. Lincoln sat at the piano, pounded the keys, then used his knees to make the instrument levitate off the floor. "See mother, our piano can dance too!" he said to his wife ("Was Not a Medium" 1891).

This story refers to the most famous event in the story of Lincoln as a Spiritualist: when Lincoln attended a séance in Georgetown in February 1863 and the medium made a piano jump up and down and move around the room. Lincoln placed his hands under and above the piano to check for strings, then actually jumped on top of the instrument to get it to settle down, which it did not. Lincoln supposedly said he had no doubt that some "invisible power" had made the piano dance—not an admission of belief so much as a wry statement of some sort of trickery and subterfuge (Maynard 1891; McMurtry 1963).

According to Lincoln scholar Jay Monaghan, in his examination of the historical sources relating to Lincoln and Spiritualism, there are only five proven times when the president attended a séance, while we know his wife attended many more. Monaghan declared that the president attended these events more than anything as a "diversion" from the overwhelming cares of state and nationhood; all respected and reputable Lincoln scholars who have examined this issue believe the same: that attending a séance was, for the president, entertainment as well as an act of intellectual curiosity—even a way to protect his believing wife (Monaghan 1941; Nickell 1999).

After Lincoln's assassination in April 1865, Mary Lincoln continued attending séances, visiting mediums in various cities throughout the Midwest. Although in a November 20,

This is the most famous photo of Mary Lincoln in existence and perhaps the most famous "spirit photo" in existence. It was taken in 1872 when Mary Lincoln, using a pseudonym, went to William Mumler's spirit photography studio in Boston for a sitting. The "spirit" of Abraham Lincoln stands over Mary's left shoulder, while over her right shoulder, very faint and often difficult to see, is the "spirit" of her dead son, Tad. Image courtesy Lincoln Financial Foundation Collection, Indianapolis, Indiana.

1869, letter to her friend Sally Orne she outright denied being a Spiritualist, she did state her "sincere" belief that "our loved ones, who have only, '*gone before*' are permitted to watch over those who were dearer to them than life" (Turner and Turner 1972)—which is basically a definition of Spiritualist doctrine. Her dedication to the religion took on a greater fervor after the death of Tad, the Lincolns' youngest son, at only seventeen years old in 1871. Mary's subsequent visits to Spiritualists in Illinois; Wisconsin; Michigan; Massachusetts; New York; and even Ontario, Canada; are well documented, as is her famous 1872 trip to Boston in which she had her portrait taken by the renowned spirit photographer William Mumler (Mumler 1872). That photo, which includes images of Abraham Lincoln's ghost hovering over Mary's left shoulder and Tad's spirit hovering over her right shoulder, has since become infamous. It was also referenced in the 1920s as proof that Spiritualism was a Lincoln family belief. (See Stuart Vyse's 2024 SI article "Science and Pseudoscience in London" for more about Mumler and the photo.)

Before that happened, however, a public discussion occurred about Lincoln's belief in Spiritualism after the 1891 publication of the book *Was Abraham Lincoln a Spiritualist?* by Nettie Colburn Maynard. Maynard, who met the Lincolns while she was a young woman, wrote of multiple séances she supposedly held for the president and first lady, both in and out of the White House. She declared both Lincolns were devout believers in Spiritualism. She even claimed she had daily meetings with the first couple, during which the spirits would guide President Lincoln in his management of the Civil War (Maynard 1891). Today, we know that some of Maynard's stories of being in the White House were true, verified by other contemporary sources, but others in her book—such as the daily meetings—have no proof other than her word.

Maynard even inadvertently admitted Lincoln's lack of Spiritualist faith in her book. The last time she saw him alive, Maynard told Lincoln she had to leave Washington because her father was dangerously sick. Lincoln replied, "But cannot our friends from the Upper Country tell you whether his illness is likely to prove fatal or not?" Maynard replied that she had consulted the spirits, but they said her presence was necessary for her father's recovery. "I didn't catch her, did I?" Lincoln laughingly said to another person in the room, showing, albeit in a friendly way, his contempt for the idea of spirit communication (Maynard 1891).

But at the time of its publication in 1891, *Was Abraham Lincoln a Spiritualist?* caused a national stir. In 1893, former Minister to Great Britain Robert T. Lincoln, who rarely imposed himself on public debate about his father, even issued a statement flatly denying his father was a Spiritualist ("Personal" 1893). On November 25, 1894, John G. Nicolay, President Lincoln's White House secretary, also denied the claim, telling Lincoln biographer Jesse Weik it was "almost too absurd to be contradicted" (Herndon-Weik Collection of Lincolniana n.d.; "Lincoln and Spiritualism" 1891).

Spiritualism continued as a worldwide phenomenon after the turn of the century, but it gained renewed momentum in the wake of World War I. By the early 1920s, still riding the post-war wave, Spiritualists sought to bolster their credentials by using the 1872 spirit photo of Mary Lincoln as their proof.

Houdini Defends Lincoln

Harry Houdini, at that time at the height of his craft and fame as an illusionist, with his great love for Abraham Lincoln and his great disdain for Spiritualism, immediately fought back. Houdini called Lincoln his "hero of heroes" and even named his pet eagle after the Civil War president. The illusionist was also a fervent critic and active debunker of Spiritualism and Spiritualist mediums. As he wrote in his book, he dabbled as a medium in his younger years, considering it a "lark." As he got older, he realized "the seriousness of trifling with the hallowed reverence which the average human being bestows on the departed" (Houdini 1924b).

Houdini claimed that he investigated and exposed hun-

dreds of Spiritualists throughout his career, even getting many of them arrested for fraud. During the final three years of his life, he acted as a judge for a 1923 contest sponsored by *Scientific American* magazine. The magazine offered two $2,500 prizes for conclusive proof of psychic manifestations. The prizes would be given only if a psychic could produce manifestations in front of a committee of judges and under scientific conditions, with the full committee agreeing as to the manifestation's authenticity. The committee of five judges included two world-renowned psychic researchers, a psychologist, a physicist, and Houdini (Bird 1923). The *Scientific American* contest got off to a slow start, with most of the invited mediums refusing to be tested. Ultimately, the committee investigated numerous mediums, pronouncing them all frauds (Courage 2020).

It was during the early 1920s that Lincoln as a Spiritualist resurfaced as a national talking point, thanks mainly to Sir Arthur Conan Doyle, creator of Sherlock Holmes and an avid Spiritualist. Doyle gave a lecture tour throughout the United States in 1922–1923 and repeatedly claimed that the Civil War president was a believer and had held numerous séances in the White House (Carroll 1923). Doyle's source was Nettie Maynard's 1891 book, but his statements also reinvigorated mentions of Mary Lincoln's 1872 spirit photo, which had become an international topic in 1894–1895 along with discussions of spirit photography. Houdini, a longtime personal friend and public antagonist about Spiritualism to Doyle, quickly responded with rebuttals in word and photograph. He produced a photo showing himself performing an escape trick with the spirit of President Lincoln apparently watching and said it was all a simple trick any amateur photographer could achieve through double exposure of previously prepared photographic plates (Houdini 1924a).

In 1924, Houdini wrote to Mary Edwards Lincoln Brown, Mary Lincoln's grandniece, to explain. He enclosed a photograph of himself and Abraham Lincoln's spirit. "Although the Theomonistic Society in Washington, D.C. claim that it is a genuine spirit photograph, as I made this one, you have my word for it, that it is only a trick effect," he wrote on February 13 (Lincoln Collection n.d.). Newspapers throughout the United States ran the photo—and usually a full-page spread about Houdini debunking Spiritualists and spirit photos.

Seeking to bolster his defense of Lincoln, Houdini wrote to Robert Lincoln, the only living Lincoln son, on February 19, 1925, to ask about the Mary Lincoln spirit photo. "[Mediums] are frequently using this photograph as a genuine test, and as I have reason to believe that it is not genuine, their using it as propaganda ought to be stopped," Houdini wrote (Robert Todd Lincoln Collection n.d.). The top corner of Houdini's letter has a handwritten note by Robert Lincoln's personal secretary, Frederic N. Towers, which states, "Answered: Mr. L says picture a fraud, but does not want to enter into any controversy on subject." In subsequent correspondence with Houdini on September 28, 1925, Robert Lincoln (through his secretary) emphatically denied that his father had any such belief in the subject and "was never known to express any belief

in so-called psychic phenomena or 'spirit life'" (Robert Todd Lincoln Collection n.d.).

Houdini responded on October 20 by stating, "Under no circumstance would I think of drawing you into the controversy. My object is to have the facts so that in case sometime in the future for historical records, when you are no longer in this world, someone will come on and say your most illustrious father may have been a believer and that fact alone would cause a great many people to believe in the possibility of the communication with the dead" (Robert Todd Lincoln Collection n.d.).

Still a part of the *Scientific American* committee at this time, Houdini also testified before Congress about the dangers of Spiritualism to communities and individuals within the United States, saying it opened people up to blackmail, bankruptcy, and even, in some cases, insanity. "This thing they call 'spiritualism,' wherein a medium intercommunicates with the dead, is a fraud from start to finish," Houdini began. "In thirty-five years, I have never seen one genuine medium" (Hearings Before the Subcommittee on the Judiciary of the Committee on the District of Columbia 1926).

Final Words

The practice of Spiritualism still exists today, and believers continue to claim Abraham Lincoln as a devotee to their religion—despite the complete lack of any evidence (rational or believable) to back up their claims. There have been over

Houdini (front left) testifying against Spiritualism at a February 1926 meeting of the U.S. Senate Committee on the District of Columbia. Seated on Houdini's left is U.S. Senator from Kansas and committee chair Arthur Capper. Credit: Image courtesy Library of Congress, Prints & Photographs Division (reproduction number, e.g., [LC-F82-1234]).

one dozen books and countless articles all claiming to "prove" this theory, all written by devout Spiritualists using incorrect information and biased assumptions.

As long as Lincoln remains the greatest, most influential American in history, people will continue to claim his mantle for all their personal and professional passions. But as Lincoln himself said after attending one séance in the White House: "I have seen strange things and heard rather odd remarks, but nothing which convinces me … that there is anything very heavenly about all this" ("President Lincoln Has …" 1863). ■

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Why You Should Be More Skeptical the Next Time You Read a Health News Article

In a changing media landscape, health news—with an emphasis on the wellness industry—is moving toward prioritizing sensationalism over science.

RINA RAPHAEL

Last year, wasabi had a big moment.

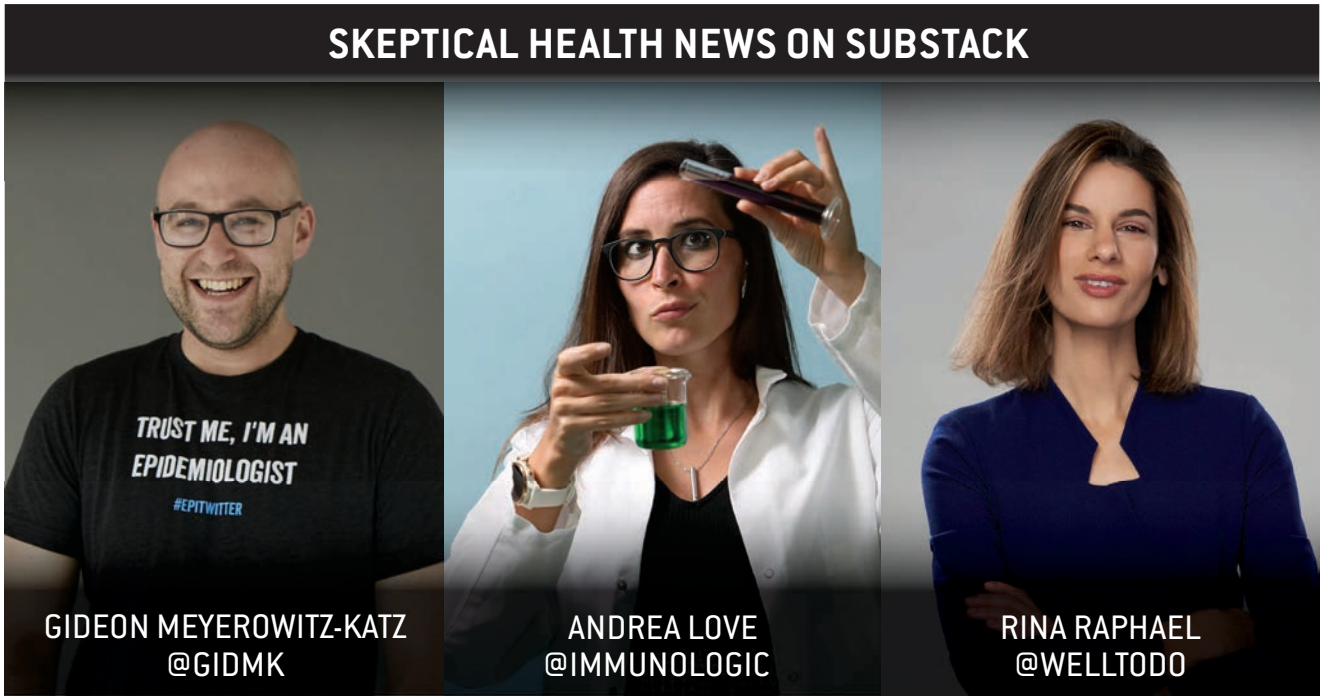
CBS News claimed the sushi condiment could offer a "boost in memory," while *USA Today* suggested it was linked to "a better brain." The *New York Post* noted it had "really substantial" cognitive benefits.

Yes, the spicy green stuff you always wish is guacamole was lauded by the press following the release of a new study. However, what was not mentioned was that the study had a small sample size, was published in a low-quality journal, and was funded by Kinjirushi Co., the leading global manufacturer of wasabi products—quite literally Big Wasabi. While that doesn't necessarily invalidate the study's findings, it's relevant information to pass on to the reader, isn't it?

It's just one example, but hype is becoming more common as reporters increasingly regurgitate press releases with barely any skepticism or due diligence. This is one reason why, in 2016, epidemiologist Gideon Meyerowitz-Katz, MD, started a newsletter where he covers many misrepresented studies, such as headlines suggesting light pollution increases the risks of Alzheimer's (*Forbes*), common food pesticides reduce sperm count (CNN), or that kimchi helps you lose weight (NBC News). "People don't realize how vague and dodgy a lot of these headlines can be," Meyerowitz-Katz told me in an interview.

As the conveyor belt of company-sponsored and academic studies accelerates, so do news stories exalting the trivial and insignificant. Reporters pick up the minutiae of minutiae—like what minute of the day is best to exercise—or "quick fix" consumer solutions because "the actual scientific breakthroughs are very few and far between," exercise scientist Nick Tiller, PhD, CSI fellow, and author of *The Skeptic's Guide to Sports Science*, told me.

A big part of the problem is the need for more frequent, eye-catching content. Many publications feel pressured to adapt to the changing media landscape. With shrinking news audiences and dried-up advertising, social media platforms have become stiff competition. Reporters must churn out more stories to compensate, leaving less time for important stories that deserve more attention and less fanfare.



Wellness Content Often Isn't Well

Health, meanwhile, is becoming an increasingly lucrative beat, especially as the wellness industry balloons to encompass more and more categories. (*Wellness* is an ambiguous term that can just as easily mean fitness as it does activated-charcoal toothpaste.) With outlets further incentivized to produce health-related content, more writers are trying their hand at the beat. Those who once covered Fashion Week are now pitching nutrition stories, even though they may be fuzzy on causation versus correlation.

There are now wellness sections that resemble health sections but are seemingly more permissive of pseudoscience and TikTok trends, responding to audience preferences. (This might be all the more pervasive for subscriber-based outlets, particularly those catering to upper middle–income, female readers.) The *New York Times T* magazine published a "My Detox" column in which bold-faced names shared their recommendations "to detox, cleanse—and refresh" (despite the fact that there is no scientific definition of *detoxing*). One artist's morning chai latte is made with "adaptogenic herbs used since ancient times to fortify the body against ailments."

Top media outlets resort to sensationalized headlines such as "Do You Really Need Sunscreen?" or "Dry Brushing, Body Scraping, Gua Sha: Lymphatic Health Is All the Rage," giving a wink and a nod to controversial ideas and semi-endorsing alternative-medicine practices. *The New York Times* describes how lymphatic massage has been used for generations in "restoring balance" and "bolstering immune function." Controversy inspires a click. Better yet, it sparks a comment section debate.

Worse, both sides-ism has come for health science, in which holistic healers and naturopaths are offered the same airtime—and respect—as MDs and "Western" experts. In catering to their Goop-curious audiences, publications frequently legitimize dubious medical practices.

Wellness stories are often not held to the same skeptical or fact-checking standards as health/medical reports, mainly because wellness is considered "lifestyle" content. Consider all the first-person "I tried it!" accounts allowed for at-home health tests and dietary supplements. Can you imagine the same leniency for pharmaceuticals? More publications are going all in on this type of service content: shopping guides, how-tos, and product reviews. They're cheap, quick to produce, and can be easily manipulated to improve SEO rankings. Some publications even have their own product shops, blending editorial content with commercial content. For instance, *GQ* magazine sells a supplement powder to "increase your cellular energy" and "reverse aging."

There are still vestiges of journalistic standards here and there, however. Sometimes, although not often enough, there is pushback in the second half of an article. The problem? Most Americans only read the headlines (Cillizza 2014).

The News Keeps It Simple, but Studies Are Complex

Clinical psychologist Jonathan Stea, PhD, R.Psych, author of the new book *Mind the Science: Saving Your Mental Health from the Wellness Industry* (and recent presenter for *Skeptical Inquirer Presents*), witnesses a media ecosystem lacking an element crucial to science: nuance. CNN, for example, reported on a study that supposedly found CBD effective in treating heroin addiction. However, the participants in the study were not actively using heroin, and CBD was not used to treat withdrawal symptoms or maintain tolerance. Instead, it was used to help manage cravings and anxiety that were experimentally induced. The findings were clinically interesting, but managing cravings is just one aspect of addiction treatment, according to Stea. Even with more substantial evidence, the effectiveness of CBD would still need to be compared against other medications for managing addiction.

"It's almost like how propaganda works where it's sort of a kernel of truth, and then it just gets exaggerated and blown out of proportion," Stea told me, speaking of exaggerated headlines and misrepresented studies.

Basically, science is boring, and boring doesn't sell.

Other times, reporters don't know enough about scientific research and how to critically assess a study (assuming, of course, they even research beyond the press release). For example, a newly minted wellness reporter could be easily swayed by the Environmental Working Group's (EWG) yearly "Dirty Dozen" list, a shopper's guide to produce that purportedly contains high levels of pesticide residue and, therefore, should be avoided. Every year, Americans are warned about the evils lurking in their produce section. In 2024, nectarines made the cut, singled out by the environmental advocacy organization for being linked to heart disease, cancer, and other disorders. It's a ready-made, media-friendly list that attracts reader interest, and reporting on it seems like a public service too.

Here's the thing: The EWG's interpretation is based on extremely high doses, as typical exposures to such chemicals are at infinitesimal levels. A 150-pound adult could consume more than 8,000 conventionally grown nectarines *in one day* without any ill effects from pesticide residue, even if the nectarines contained the highest pesticide residue recorded by the USDA. But to know that, you'd need to understand the difference between relative and absolute risk or various types of studies.

"The number of times I've seen [stories] report on rodent research as if it was in humans and barely mention the fact that it was in rats," laments Meyerowitz-Katz, "that's basic common sense, not just scientific literacy."

Health studies surrounding risks and exposures are all too frequently taken out of context, stirring unnecessary panic and demonizing harmless foods and products. "It takes the authority and the autonomy away from the actual experts who are doing the work on a daily basis to actually ensure that these things are safe," immunologist and microbiologist Andrea Love, PhD, the newest columnist for SI who also runs the ImmunoLogic substack, told me.

Reporters would catch these things if they did their homework instead of simply repurposing a study's abstract or quoting the lead researcher as if they were an independent expert. Sometimes they do reach out to other experts, but without a

good understanding of the field, they may not consult someone with relevant expertise. Michelle Wong, PhD, a cosmetic chemist who runs the blog Lab Muffin Beauty Science, has seen too many reporters ask for input on product safety from dermatologists instead of toxicologists, regulators, and cosmetic chemists. "It'll be the right questions, but the wrong people," Wong told me in an interview.

Reporters certainly have a lot to answer for here. To be fair, however, it can be increasingly hard to tell what's scientific and what's not when some of our most esteemed institutions contribute to blatant pseudoscience. More than once, I've pushed back against an editor who rallied for an unscientific practice or product, only to be told a top medical institute vouches for it within their "complementary and integrative medicine" wing. How can I debunk reiki energy healing when the Cleveland Clinic offers it? What do I say when the World Health Organization legitimizes traditional Chinese medicine, including a diagnosis called "liver qi stagnation" (liver damage from emotional disharmony)?

Institutions likely turn a blind eye because alternative medicine brings in a lot of money. But the adoption of non-evidence-based medicine means we risk asking the public to trust the expert and, by extension, the journalistic institutions who rely on them.

Science communicators worry these issues will only get worse. According to a Gallup poll, Americans' trust in the media dropped to a historic low in 2023, tying with 2016 (Lipka and Shearer 2023). Meanwhile, although nearly two-thirds of Americans have a great deal or fair amount of confidence in scientists, this number has been declining since the beginning of the pandemic (Kennedy and Tyson 2023).

The content mill doesn't look promising. Tiller, who contributes to several publications, has noticed a trend toward even shorter articles; there are fewer in-depth, substantive "long reads," and it seems like even social media posts are getting shorter. According to a Pew Research report, the average time spent on the top fifty U.S. newspapers' websites has decreased to just under one minute and thirty seconds, down from two and a half minutes in 2014 (Newspapers Fact Sheet 2023). People's attention spans seem to be getting shorter. "Attention is today's commodity—that's the currency," says Tiller. "To be heard through the noise, you have to be increasingly more concise, increasingly more sensational."

Science communicators have only one option: invest in storytelling skills, rely on social media, and use emotive arguments to better appeal to audiences. Michelle Wong of Lab Muffin Beauty Science has a thriving YouTube channel. Gideon Meyerowitz-Katz's Substack, titled Health Nerd, has thousands of subscribers. Andrea Love counts more than 70,000 followers on Instagram, where she debunks fear-mongering headlines.

Tiller spends hours talking with journalists who often misunderstand the complex field of science. He emphasizes that one study does not represent a scientific consensus and that science, while the best process for advancing our knowledge of health, is not perfect; people conduct science, and people make mistakes, have biases, and are subject to certain limitations. The media often needs guidance to understand the real significance of a study, says Tiller, who is frequently asked to comment on why some new sneaker or fitness tracker will revolutionize health. "Just because a study's been published doesn't necessarily mean it's gospel."

That's too bad for wasabi. But I did just read something about blueberries … ■

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Courts, Child Custody, and 'Parental Alienation' Claims

JEAN MERCER

Until about 1980, many states had laws prohibiting "alienation of affections." They provided recourse to people who had affections "stolen" when someone seduced or lured away a spouse or fiancé/fiancée. Similar laws applied if someone alienated property—sold, used, or hid away money or goods that rightly belonged to someone else.

Though tort reforms substantially did away with "alienation of affections," in the mid-1980s a new form of alienation was proposed: "parental alienation." The idea here, as posited by the child psychiatrist Richard Gardner, was that one divorcing parent could influence a child to reject and avoid contact with the other parent; the child was thus said to have become alienated from the avoided parent, who had in fact done nothing wrong. Parental alienation was never a psychological concept or a diagnosis in any edition of the *Diagnostic and Statistical Manual* or in the *International Classification of Diseases* but became a go-to reference in divorce and child custody cases. Allegations of parental alienation by one parent were used to weaken the pleadings of the other parent for financial advantages or decisions about children.

The influence of parental alienation allegations was multiplied by proposals for treatment of "alienated" children by reunification therapies. The possibility of a court order for reunification therapy was a very real threat that could well cause one parent to comply with the wishes of the other. Though reunification therapies vary, they tended to share certain characteristics. They were done only by court order, so resistance by a parent could well be punished as contempt of court. They involved several days of the experience, usually in a hotel or bed and breakfast, to which the child might be transported by youth transport service workers with handcuffs and other methods of forcing compliance. The court order included a ninety-day, renewable, no-contact order for the child and the preferred parent—no phone calls, cards, or birthday presents were permitted. Following the reunification therapy, the child would go home with the rejected parent and would continue in a parental alienation-approved therapy. The preferred parent—alleged to have caused the alienation—would pay for all this, at a cost of many tens of thousands of dollars.

Parental alienation proponents claimed that their outcome research showed that reunification therapies were effective, but in fact they never reported on their method of determining that parental alienation was present to begin with, nor did they clarify why they thought matters had improved. Yes, the children went home with the rejected parent, but as they had to comply with the court order, this does not seem to be an indication of change.

My book, *Someone Said Parental Alienation* (2025), is the first examination of the experiences of children and parents when ordered into reunification therapies. Now young adults, people who were as children alleged to be alienated from a parent told vivid stories. They stressed that they were not influenced by the preferred parent but avoided the other parent because of his or her undesirable behavior. They described the reunification therapies as both banal and threatening. On the one hand, they spent much "treatment time" watching educational videos that showed how people can be influenced or persuaded; on the other hand, they had their phones, money, and IDs taken away and were told that if they did not cooperate, they would be sent to wilderness therapy or residential treatment programs. The threats convinced them that it was best to "fake it until you make it" and to comply until their eighteenth birthdays when they could make their own choices.

About a dozen states have recently passed legislation making it more difficult for parental alienation allegations or reunification therapy to play roles in child custody cases. A small part of that development has come from young adults' stories about their experiences, but still more has been motivated by tragic deaths of children who have been murdered when court-ordered into the custody of parents who are indeed abusive. The claims that the preferred parent was the cause of the child's resistance to contact were wrong.

It would be a mistake to claim that parents never persuade children to avoid their co-parents—but evidence demonstrates that it is a bigger mistake to believe that children who are afraid of one parent have no good reason for their fear. Assuming that parental alienation is present will cause adverse experiences and may cause tragedy. ■

Jean Mercer, PhD, is a developmental psychologist who has been studying potentially harmful psychosocial treatments for children for twenty-five years.

Cosmic Love: Astrology Popularizes Stereotyping and Discrimination

CRAIG A. FOSTER

Astrology's reliance on stereotyping and discrimination demonstrates how people unknowingly rationalize what they already want to believe.

Astrology is the practice of using astronomical events to explain life on Earth. In the United States, astrologers typically use birthdates to assign people to zodiac signs, such as Leo, Pisces, Aquarius, and so forth. Astrologers then use the zodiac signs, sometimes with additional information, to make generalizations about the people who belong to them. For example, Leos are supposedly associated with a portion of the sky where an antiquated system of connect-the-stars somehow creates a lion. This connection somehow makes Leos spirited and passionate—like lions are.

Sadly, the astrological worldview teaches people to stereotype and discriminate, a method of thinking and behaving that most astrology supporters would find deplorable in other contexts.

I taught the principles of stereotypes, discrimination, and prejudice for decades as a social psychology professor. Stereotyping is inferring a person's personal attributes based on their group membership, like assuming a person has certain personality traits because they belong to a group of people who were born at similar times. Discrimination is the behavior that follows the stereotype. Astrology encourages people to navigate their world based on assumptions about character and zodiac signs.

For example, astrology unabashedly tells people they can predict how other people will behave in romantic relationships based on the zodiac sign to which those people belong. Astrology supporters also encourage making hiring and promotion decisions based on this system of stereotyping. Imagine failing to get a job because you had the wrong zodiac sign.

The pro-stereotyping nature of astrology is clarified further by taking comments about astrology and placing them into a different context. To do this, I watched Amazon Prime's *Cosmic Love*, a supposed reality television show about using astrology to improve romantic partner selection. Consider how the people involved with the show reinforce stereotyping others based on their zodiac sign.

- Cons of dating a Gemini: They're often flaky and fickle
- CJ's optimistic Sagittarius energy is a perfect complement to your ambitious Capricorn personality
- Yana is going full Aquarius by keeping this conversation light and breezy
- Cancers value security and latch onto their lovers quickly
- He is a Pisces … that's the one thing I said I didn't want.

Now revisit these statements and replace the zodiac categorizations with race-based categorizations. The results are so uncomfortable, I won't write them due to concern about being misrepresented.

Astrology supporters, not wanting to see the contradiction, might soften their stance and suggest the personal characteristics attributed to zodiac signs are just general tendencies, not invariable conclusions. For instance, *Cosmic Love*'s "Astro Chamber" sometimes suggests that people with certain zodiac signs *can* have certain characteristics—not that they *always* have them. This defense of astrology makes no sense. If zodiac signs only predict personal characteristics some of the time, the natural follow-up question is *how often* do zodiac signs predict personal attributes? Astrologers don't seem to have an answer. Scientists do; research shows that zodiac signs do not predict personal attributes any better than random chance does.

This just in: A flipped penny *can*

come up heads.

Besides, even if zodiac signs occasionally predict personality (again, they don't), why bother using them at all? It seems like it would be better to omit the sometimes-accurate zodiac and just get to know people for who they are. Furthermore, even if this "grain of truth" argument were true, it still doesn't justify relying on it. Imagine a hiring committee stating that science shows a small average difference between women and men, so it's okay to blindly reject one or the other. Good luck with that.

What's really going on is that astrology gets a pass, because it seems benign compared to other forms of stereotyping and discrimination. Rejecting a Pisces's romantic interest is trivial compared to the stereotype-based horrors that have occurred in domains such as religion, race, gender, and sexual orientation.

That's true of course, but social rejection and employment rejection do matter, and they can matter a lot. I suppose if astrology provided useful information, one could at some point accept that astrology-based generalizations are worth the cost, like putting age limits on driving automobiles rather than trying to determine which fifteen-year-olds are ready to drive.

But scientists can't identify the mystical force that supposedly connects people to constellations, and when put to the test, astrology always fails. Astrology supporters are promoting a system of stereotyping and discrimination that has no basis in reality.

This shows how easily people can accept an argument in one domain (it is wrong to stereotype people and discriminate against them) but ignore that argument in another domain (Geminis are all the same; don't date them). People who believe they have moral high ground in one domain sometimes take moral low ground in another. That shows the power of motivated reasoning, the tendency to process information in a way that leads to desired conclusions. People don't realize that they change the rules for evaluating arguments based on what they already want to believe.

In the case of astrology, astrology enthusiasts feel comfortable teaching others how to stereotype and discriminate using their mystical system, even while they despise stereotyping and discrimination in other contexts.

Some readers might feel a little lost at the prospect of losing astrology as a tool for making relationship decisions, so here's some advice to fill the void: Align yourself with emotionally mature people who treat you and others with respect. That'll get you a lot further than worrying about zodiac signs. ■

Note

The views expressed belong to the author and do not necessarily reflect the official policy or position of Northshore School District.

Craig A. Foster is a CSI fellow and director of research and evaluation at Northshore School District in Bothell, Washington.

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FUN & GAMES

Edited by Stephen Hupp

YOU CAN FIND THE ANSWERS TO THESE GAMES IN SECRETS REVEALED (P. 66).

MISMATCHING

Below are the birth names for some of the world's greatest magicians. Can you correctly match their first and last names? (And do you know their stage names?)

DAVID	WEISZ
ERIK	KOTKIN
RANDALL	TELLER
RAYMOND	ZWINGE
STEVEN	SHAW

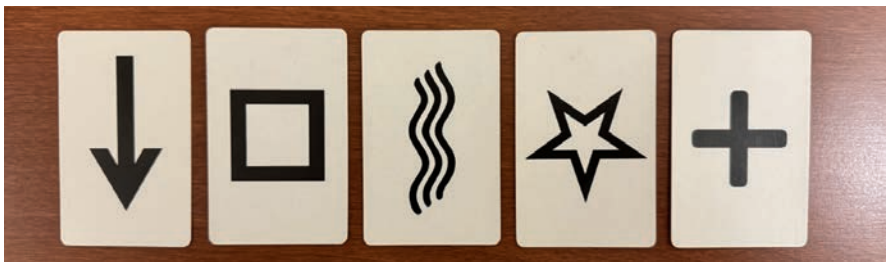
HOUDINI

WORD NOODLE

"Make a new seven-letter word (green = correct letter and position; yellow = correct letter; black = wrong letter). ***Clue: An ability critiqued by HOUDINI.***

MIND READER

Without thinking too much, quickly pick one card from the options below. Then close your eyes and imagine the card for five full seconds. Your chosen card will be identified in the Secrets Revealed section.



HOT TAKES

Wicked, *Heretic*, and *A Shot in the Arm*

Wicked

If you're a sucker for the pageantry and pizazz of a great musical like I am, *Wicked* (2024) is not to be missed. In case you've been living under a rock for the past six months, *Wicked* is the movie adaptation of the stage musical of the same name (2003), which is an adaption of the book *Wicked: The Life and Times of the Wicked Witch of the West* by Gregory McGuire (1995), which is a topsy-turvy take on the beloved movie *The Wizard of Oz* (1939), which is based on the classic L. Frank Baum book *The Wonderful Wizard of Oz* (1900). Phew! Did you follow that chain? Good.

I loved just about everything about the movie. It was truly a feast for the eyes as well as the ears. The colorful costumes and set design, choreography—and obviously the music—all came together to create a truly spectacular cinematic event. Cynthia Erivo (Elphaba) and Ariana Grande (G[a]linda) are perfectly cast as the two leads, and it was great to see their take on the evolution of the relationship between Elphaba and Galinda from the antagonistic "What Is This Feeling?" to the lighthearted "Popular" to the show-stopping (and Part 1–ending) "Defying Gravity." And speaking of casting, the always quirky Jeff Goldblum is well suited to play the Wizard

of Oz himself. Part despot and part snake-oil salesman, skeptics will recognize the wizard's bag of tricks. He pretends to be all-knowing and all-powerful, but in reality he is just a humbug with no powers of his own. He just wants to use Elphaba for her powers, such as controlling the weather and telekinesis. (Sound familiar? Spoon-bending, anyone?)

My only complaint is that at two hours and forty minutes, the movie still felt too short, and we have to wait an entire year, when part 2, *Wicked: For Good*, will be released, for the rest of the story.

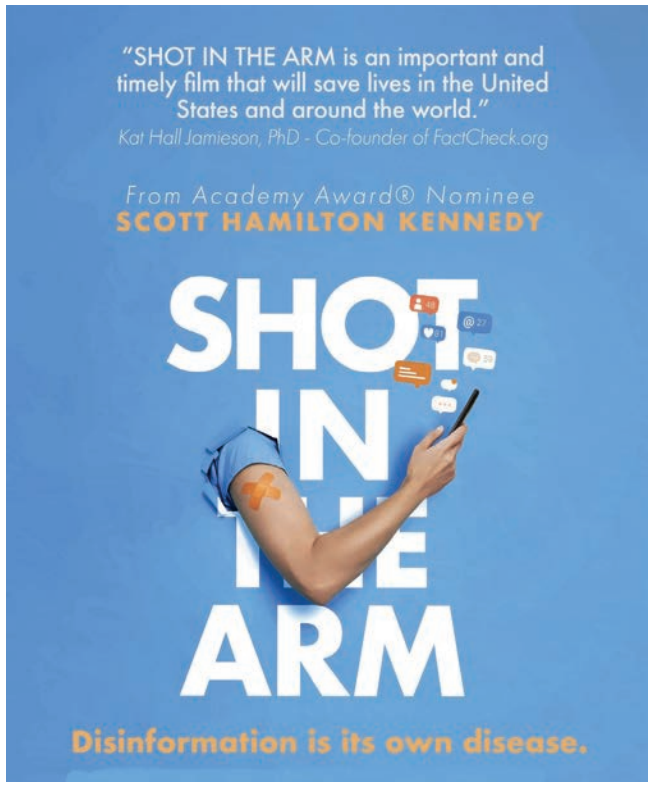
Julia Lavarnway
Managing Editor of Skeptical Inquirer

Heretic

In the new film *Heretic*, when two young female Mormon missionaries knock on a door at an old rural house to spread the gospel, they are delighted when a Mr. Reed (Hugh Grant, alternately friendly and fiendish) invites them to discuss the Book of Mormon. As it happens, Reed already knows quite a bit about the Latter-day Saints—and he has thoughts. They are philosophical, not predatory; he keeps them there not to leer but to force them to consider their core beliefs about faith and free will. Some of the best films play with ideas of truth and doubt (*Rashomon*, *Doubt*, *Breaker Morant*, etc.). William Friedkin, director of *The Exorcist*, stated that he didn't consider it a horror film, saying instead that it's "about the mystery of faith." Similarly, *Heretic* touches on belief and skepticism throughout: Why do we believe what we do, and is it ethical to believe without sufficient evidence? (These themes have been tackled in these pages over the years by Massimo Pigliucci and others.)

This is heady stuff, and in a genre that often leans into lazy filmmaking with splatter effects and jump scares, it's nice to see *Heretic* buck that trend. Calling this WTF-a-minute ride an intellectual horror film gives it perhaps too much credit, but the screenwriters clearly researched the skeptical literature; one of the missionaries summarizes a famous (real-life) study on the failure of intercessory prayer, concluding that people pray not because it works but because it makes them feel good—a skeptical lesson indeed. As I watched the film, I thought of how much the late Tom Flynn, longtime editor of *Free Inquiry* and gleeful skewerer of Mormon mythology, would have loved it.

Benjamin Radford
Author of *America the Fearful*


"SHOT IN THE ARM is an important and timely film that will save lives in the United States and around the world."
Kat Hall Jamieson, PhD - Co-founder of FactCheck.org
From Academy Award® Nominee
SCOTT HAMILTON KENNEDY
SHOT IN THE ARM
Disinformation is its own disease.

Shot in the Arm

Shot in the Arm is an excellent eighty-seven-minute documentary from Academy Award–nominated filmmaker Scott Hamilton Kennedy and Executive Producer (and CSI Fellow) Neil deGrasse Tyson. It explores vaccine hesitancy historically and in the context of the COVID-19 pandemic. It includes, as voices of reason and science, Paul Offit, MD, Peter Hotez, MD, and Anthony Fauci, MD. It exposes the mendacity and vaccine fearmongering of Robert F. Kennedy Jr., Del Bigtree, Andrew Wakefield, and others. It's always frustrating when journalists refer to people such as Kennedy, Bigtree, and Wakefield as "vaccine skeptics" when they are actually vaccine denialists of the effectiveness of recommended vaccines. On the other hand, in the documentary, Dr. Offit (also a CSI fellow) makes the case that skepticism is a good starting point for any new vaccine, saying: "I am a member of the FDA's vaccine advisory committee, so I'm a vaccine skeptic. Everybody that sits around the FDA vaccine advisory committee table is a vaccine skeptic. We want to see the data." True vaccine skeptics put aside their doubts about proposed medical innovations such as vaccines when relevant data conclusively show they safely offer significant benefits. In contrast, as revealed in *Shot in the Arm*, the leaders of the anti-vaccine movement are cynical promoters of closed-minded, conspiratorial mindsets with unrealistic expectations of absolutely zero vaccine risk and perfect efficacy.

William Matthew London
Editor of *Consumer Health Digest*

Send in Your Hot Take!

Hot Takes are for recent movies or shows and should be no more than 225 words. Those selected may be edited for space, clarity, and/or spoiler prevention. Submit your Hot Take by email text to letters@skepticalinquirer.org. Include your full name and occupation. Do not include attachments.

Academic Freedom: An Interview with Steven Pinker

AMARDEO SARMA

Amardeo Sarma

Steven Pinker

Amardeo Sarma: How do you see the state of academic freedom? Is it getting better or worse? Is it rebounding? Do you see some hope?

Steven Pinker: It is getting worse, but I see hope. Quantitatively, it took a real nosedive after the killing of George Floyd in 2020. There are many signs that people are fed up. Efforts such as the Council on Academic Freedom at Harvard are being copied elsewhere. More and more university presidents are avowing the ideal of academic freedom. They are trying to get the universities to not issue official statements that put words in the mouths of faculty and students. Schools are getting rid of mandatory diversity statements that are just a way of filtering out people with non-woke opinions. So the pushback has started, but there is an enormous tide to push back against.

Some say that we have passed peak "woke." Do you agree?

I don't think it is wrong, but it will take a while.

I see a lot of people who have dissented are taking refuge in conservative think tanks. There are very few left-leaning groups that pick them up. Is this polarization between the Left and Right that makes it look like critical thinkers are right-wing?

I think you have identified a severe problem. It is unfortunate and historically topsy turvy to think of free speech as a right-wing cause because some of the great progressive movements in history—abolition of slavery, women's rights, anti-war, and gay rights—depended crucially on free speech in an era when they were up against the orthodoxies of the day, often enforced by repression and censorship. It is ironic that left-wing institutions that are not sufficiently behind free speech are part of the problem.

In Germany, at least some left-wing groups support dissenting voices. Why is that not the case in the United States, where it has long been a liberal cause?

Sadly, some American institutions that historically were dedicated to free speech have not only not been welcoming to free speech advocates and victims of cancellation but have joined the censors. The American Civil Liberties Union

(ACLU), the American Humanist Association, and PEN (Poets, Playwrights, Editors, Essayists, Novelists) are examples. PEN leadership has had to fight against its members seeking to stigmatize and censor people with certain opinions and enforcing orthodoxy, especially when it comes to Israel and Palestine. So, it would be a welcome development if left-leaning organizations were more embracing of free speech.

It seems to me that some, such as Judith Butler, have gone off the rails in this conflict. It was surprising to see many become so extreme, not only in this matter.

It is, for example, surprising to see a prominent member of the ACLU saying that he "will die on the hill" for banning a book that challenged transgender orthodoxy.

Regarding social justice and freedom of speech, what can skeptics do?

Skepticism is not a matter of just disagreeing with everything. It is the mindset of free speech and free thought. That is, there is a fundamental right to disagree with an orthodoxy. It is about being on the same side as academic freedom and a free press.

Regarding the German skeptics organization GWUP, there was an attempt to take it over by those who want to restrict free speech. We won that battle, but other organizations such as Terres de Femmes did not and were taken over. What can we do to prevent this from happening again and again? Is there any advice you can give us?

I am not an expert on tactics of organizational integrity. There is a background tide or process that you have to be aware of; for example, the second of Robert Conquest's Three Laws of Politics: "Any organization not constitutionally right-wing sooner or later becomes left-wing." I am sure that there are some exceptions. There is nothing wrong with people having left-wing opinions, obviously. Sometimes, left-wing opinions turn out to be correct opinions, and sometimes, they turn out to be incorrect opinions. However, to recognize that this is a natural drift, the people who pull organizations in this direction are often unaware that they have a view on things and think that what they believe is correct. Ideology is like breath; you never smell your own. Members of organizations with a mission that is not explicitly left-wing—such as humanist, free-speech, skepticism, or science organizations—should take care not to surrender to this systemic process.

It is interesting to note that many of the founders of the GWUP and similar organizations were from the liberal Left, and they are now very concerned. Many countries in Europe are also moving toward polarization, where you cannot even say that there are two sexes because then you are almost considered a fascist.

Yes, right!

What lessons have you learned in the United States that we could learn from to at least prevent the worst extremes from happening? A member of our organization was disinvited after being invited to speak at a university because he did not conform to orthodoxy after much pressure, which is a big problem.

It is a big problem, yes. I don't have a formula for success, but I do think that an articulate pushback is needed, that is, making the case that can be defended with some muscle, using the bylaws of the organizations. In the United States, this is often the First Amendment, which applies in particular to public universities. However, many private universities, though they are not legally obliged to do so, declare that they abide by First Amendment principles. That is true for Harvard University, where I work, for example. Organizations can use what is already on the books and statements the institutions have already made as tools to keep them on track. A lot of the abuse of cancellation, of people getting fired or being censored, comes when there is a mob that pressures a leader to make his or her life miserable until they do what the mob wants. If you have someone pushing from the other side and yelling about free speech, at least they cannot do the lazy thing and give in. They've actually got to use their brain.

If you look at even respectable journals such as *Scientific American* and *Nature*, they publish all kinds of weird stuff. I think people such as John Maddox would be turning in their graves.

I completely agree.

It is a problem that the scientific institutions themselves are being taken over. I am trying to see where we can find some hope. Is this pushback like what's happening at Harvard happening all over the United States?

Not across the United States. For better or worse, people pay a lot of attention to what happens at Harvard. People know about our president and our former president. For better or worse, Harvard has a brand name, which is one of the reasons we announced our Council on Academic Freedom to capitalize on the attention. And many other universities have followed. At Harvard, undergraduates have formed a Harvard Association for Academic Freedom. Importantly, because some of the examples of repression are professors using their privilege to shut their students up, students have to fight back as well. It is too early to tell in terms of what can be done. I think there has got to be an awareness of some of the vulnerabilities. One of them is that organizations confuse their ambition with leftist politics. We need diverse viewpoints so that students are not just selected from the far-left end of the spectrum but people from the center and even the right of center. I think that in scientific organizations and publications, there is a tendency for people to get hired out of graduate school instead of senior scientists editing journals. They're often people who are not scientists but in science studies or the history of science and are often hostile toward science. It is a result of professionalization and specialization that it is no longer the scientists who run these but graduates of science studies programs, which I think is a point of vulnerability for scientific institutions. You know there is a generational gradient; it is statistical, and not all young people are like that. Surveys have shown that younger generational cohorts are more open to repressing ideas that they feel are not progressive enough.

Some who have spoken out against cancellation, such as Jordan Peterson, seem to have gone off the rails themselves. I've seen some of his discussions of religion where I don't even understand what he's talking about. He does not seem to focus on anything that is being asked. There also appears to be an overreaction from the other side that makes the world even more polarized than it would otherwise be.

I think this is a real problem: some people who have been rejected by the academic institutional Left seek succor, support, and warmth from the hard Right and simply exchange one set of dogmas for another. Some of them get attracted to authoritarian populism, Trumpism, reaction, and neo-fascism. They have sucked in some smart people from Silicon Valley. Part of the problem is that the hard Left and the reactionary Right are exciting to belong to. You've got passionate comrades, and you've got enemies, whereas centrist, humanist, enlightenment ideals feel kind of boring or not so cool and not so hip. I don't know what we can do to make skepticism, humanism, and enlightenment values cool. Maybe we need to hire a branding company.

There are so many exciting things in skepticism and science; there is so much to learn. I was very interested in evolution when I was a kid. In the past fifteen or twenty years, with ancient DNA and so on, great things have been discovered, many of which we never expected.

There is that, just the tremendous excitement of scientific knowledge, but another thing I have been pushing is that when you try to quantify human well-being, there are enormous advances. There is a real thing called "progress." We are living longer, and fewer kids are dying; more kids are literate, are going to school, have more access to electricity and clean water, and are getting vaccinations and antibiotics, and extreme poverty is declining. For some reason, these things are not exciting. They should be presented as incredible triumphs. I have a quote from Arnold Toynbee, a mid-twentieth century historian. He said that we were seeing for the first time in the twentieth century the idea that the well-being of the entire human species is a reasonable goal. This should be exciting and thrilling. Not only is it a goal, but it is also the ultimate defensible goal. How could anyone be against the whole of humanity being better off? It is one goal in which we have made progress, so it is not just a utopian vision. But I don't think I can single-handedly make it cool or hip.

I agree. I was fascinated when I first heard Hans Rosling in Sweden in 2013.

He was very good at it, and it is a terrible tragedy that we lost him so young.

Have we reached peak progress, or has it stalled since around 2015? Extreme poverty is no longer going down but rather stagnating. Do you think this is a temporary thing? We were looking at eradicating extreme poverty by 2030, which seemed achievable in 2015, but that seems out of reach now.

Some global trends are going in the wrong direction: War, for example, in the past three years. There is a big hit because of COVID-19, extreme poverty, and longevity. It is probably a notch, similar to the notch in life expectancy in the late teens of the twentieth century. It was not, as I first thought, because of the First World War but because of the Spanish flu, which then recovered. In sub-Saharan Africa, there was a notch in life expectancy due to AIDS until the widespread availability of antiretroviral drugs. Some things are blips and notches. It is foolish and dogmatic to say that everything will always get better. We don't know that either. Certainly, COVID-19 temporarily, democratization—we don't know, but there has definitely been backsliding, not a reversal. It is not as if the democratization since the 1970s has been erased. But still, we have wiped out a few decades of progress, as with war deaths. So, it is a profound question. The answer will probably vary case by case, but there seems to be—like you say—a stasis and some sort of backtracking.

One question or criticism we often get is that many Enlightenment scholars were racists, colonizers, and so on. How do you deal with these accusations that the Enlightenment was not so good because of all these negative side effects?

Regarding the philosophical framers and founders, I think the point is that it is not about a bunch of guys; I mean, we humans are fallible and flawed. The path to improvement is not to replace the religious prophets, messiahs, and saints with secular prophets, messiahs, and saints but to find out which are the best ideas. And the fact that some of them were either not very nice people and products of their time or not able to transcend the prejudices of their time has nothing to do with whether the ideas they proposed were any good. Also, there are a lot of anachronisms in that form of criticism with the Enlightenment being blamed for slavery and colonization. This is remarkably ahistorical, given that human history is the rise and fall of empires and, therefore, imperialism. Slavery was more the rule than the exception in human civilization. Certainly, the Slavic slave trade goes back to the Middle Ages, and Christopher Columbus's voyage toward European expansionism was before the Enlightenment. Only during the Enlightenment did you have the first systematic critique of empire, colonialism, and slavery. It is not a coincidence that the abolitionist movement emerged at the time of the Enlightenment.

… from England and France?

Right.

One of the things about the Enlightenment was that dissent could not be pushed back anymore. Previously, orthodoxy always seemed to get the upper hand. Is this cancel culture similar to religions of the past that tried to stop free thinking and prevent new ideas from emerging?

Absolutely. Forces of progress are pushing against some pretty powerful headwinds, including the fact that free speech is a weird, exotic, unusual concept. It is very unintuitive. What is intuitive is that people who disagree with me are evil and ignorant and should be silenced for the greater good. That is what is natural, so that is what we are up against. With "we," I mean advocates of free speech and skepticism. The idea, as Bertrand Russell put it: It is undesirable to believe

a proposition unless there are grounds for supposing it to be true. This may sound like a banal observation, but it is actually a radical manifesto because it is natural to believe things. It is outside the realm of day-to-day experience, where people have to be empiricists. You can't believe anything that you want because then if you look in the fridge and hope there is beer there and there is no beer there, the beer is not going to materialize. Everyone knows that. So, we are all skeptics and rationalists when it comes to our day-to-day lives. But when it comes to bigger questions of life, such as causes of fortune and misfortune, where did our species come from, what is the basis of thinking and knowledge, where does disease come from, and why do wars start, the natural tendency is to believe in the most uplifting, edifying myths, the one that makes your tribe look glorious and noble and the enemies look stupid and foolish. That is, I think, the natural way of thinking. The idea of "let us put our biases aside and try to find what is the truth with the most objective evidence possible" is what we ought to do, but that is historically a very unusual mindset.

And understanding that one may be wrong.

Indeed. That is why skepticism is a virtue, not just naysaying and negativity. It is, as I think you and I would understand, simply the realization that each one of us could be wrong about anything and probably is wrong about a lot of things. The only way we can find out what is right and what is wrong is to have an open debate and put the burden of evidence on anyone who is trying to establish that something is true.

Any last message to skeptics in the United States or Germany at a time like this?

Start by making the case loudly and clearly because a lot of the repression happens by default by surrender, by acceding to the loudest voices, so there should be voices coming from the other side at the very least. That does not guarantee victory for the forces of reason and skepticism, but there can't be inroads without them.

So, we should be open to discussing all topics, correct?

You have got to set priorities. Not everything needs to be shouted from the rooftops. But obviously people should not be punished or censored for what they say.

Thanks, it has been great talking to you.

Thanks very much, Amardeo. It was a pleasure to talk to you. ■

Amardeo Sarma is a fellow and member of the Executive Council of the Committee for Skeptical Inquiry. He is also founder and past chairman of the German skeptics organization GWUP. Sarma is managing director of the nonprofit company Scientific Temper, which is registered in Germany.

Steven Pinker, the Johnstone Family Professor of Psychology at Harvard University, is an experimental cognitive scientist and one of the world's foremost writers on language, mind, and human nature. He is a longtime fellow of the Committee for Skeptical Inquiry and author of several books, including *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress*.

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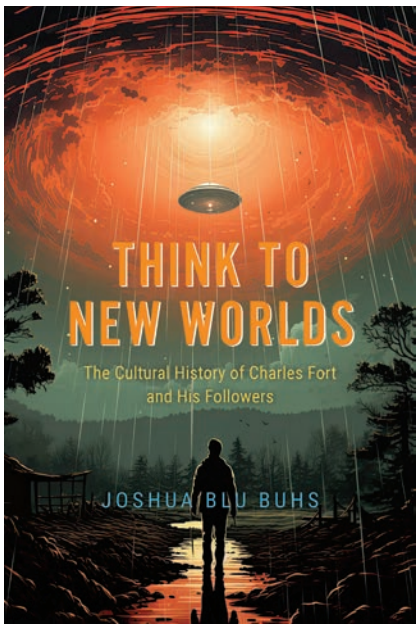
Handbook for the Curious about the Damned

Terence Hines

When I was in junior high school, I loved books by Frank Edwards. In *Stranger Than Science* (1959) and *Strangest of All* (1956), Edwards chronicled "the incredible, the eerie, the amazing, fantastic but true stories involving vanishing ships, disappearing people …" (from the cover text of the paperback edition of *Strangest of All*). Some years later, I came across *The Book of the Damned* by Charles Fort (1874–1932), first published in 1919. It, too, reported astonishing, amazing, and unexplained events. By *damned*, Fort meant events ignored by science. Edwards's books contained straightforward reports while Fort's writing was poorly organized to say the least. Worse, the first part of *Damned* consists of badly written philosophical wanderings. It made no sense to the fifteen- or sixteen-year-old me, and, rereading it again for this review, it makes no sense to the older me now. Until I read Joshua Blu Buhs's new book, *Think to New Worlds*, I had no idea how influential Fort had been in several areas of intellectual life.

Fort combed through newspapers and other publications and collected reports of strange and "damned" events, such as stones, fish, and frogs falling from the sky; people and various objects vanishing with no obvious explanations; and people with "wild talents." In *Damned* and later books, Fort theorized about what might have caused such events. He wondered whether space wasn't empty but contained floating islands, from which the rocks had fallen and a sort of Saragossa Sea, from which the fish and frogs originated. Fort also believed that the earth, and humans, were "owned" by some alien entities that were responsible for the disappearances he cataloged. A later book, *Wild Talents* (1932), dealt with "pictures falling from walls [poltergeist], mysterious diseases, vampirism, bodies bursting into flame, saintly miracles, psychic powers" (p. 40). Fort "used anomalies to explode science and from the wreckage create something else: the world as a strange, ambiguous domain populated by things that science had damned" (p. 105).



Think to New Worlds: The Cultural History of Charles Fort and His Followers. By Joshua Blu Buhs. University of Chicago Press, 2024.

Buhs's book chronicles Fort's influence not only on science fiction but on literature and society more broadly. The book is divided into six chapters. The first chapter introduces the reader to Fort and the initial reactions to his work. Fort was admired by some of the great writers of his day. Theodore Dreiser was reported to have said "I was in a worshiping state of mind" regarding Fort. Ben Hecht was also a fan, saying in 1940, "he has delighted me beyond all men who have written books in this world." Hecht did equivocate a bit: "Mountebank or Messiah, it matters not. Henceforth I am a Fortean" (p. 28).

H.L. Mencken was less impressed. In 1932, he wrote that the fact that Fort's ideas were "accepted as gospel by a considerable body of presumably sane men" was "melancholy evidence that the human race has a long way to go before it will deserve to be called rational" (p. 29).

Fort had a strong influence on early science fiction writers. Many of the big names of the 1930s were Forteans. British science fiction writer Eric Frank Russell was a member of the Fortean Society. James Blish was also a member. John W. Campbell thought that Fort's books were excellent sources for science fiction stories. As long-time editor of *Astounding Science Fiction*, Campbell was in a powerful position to shape what was published in one of the most important science fiction magazines of the time. The previous editor had published Fort's book *Lo* serially in the magazine. Fort's influence on science fiction lasted well beyond his death into at least the 1950s and 1960s. One of those so influenced was Robert Heinlein.

The second chapter is centered around the activity of Tiffany Thayer (1902–1959), an advertising man, a writer, and probably Fort's most avid fan and promoter of all things Fortean. He recreated the Fortean Society, which had existed briefly while Fort was alive. In 1937, he started the magazine *The Fortean* to "launch a satirical attack on 'the smug Complacency of Authority'" (p. 49). Among other things, he believed that "Amelia Earhart and [her navigator] Fred Noonan were murdered by Dogmatic Science" because scientists didn't really understand earth's geography (p. 49). This view of the world led Thayer and

the Fortean Society into a conspiracy theory view of the world. This continued well into the 1950s when Thayer denied the existence of Sputnik and indeed the possibility of satellites or any space travel. He also, after World War II, claimed that the atomic bomb was a hoax. Thayer was a forerunner of the "moon landings never happened" conspiracy theorist.

Chapter three delves more deeply into the influence of Fort on science fiction. The common thread between Forteanism and science fiction was a "shared interest in the anomalous" and, for some, the belief that if these anomalies could be understood that understanding would reveal "the forces shaping human life, the machinery of history, its hidden mechanisms" (p. 102). When this was done, perhaps "these forces could be controlled" and "history need not just happen … human evolution might be controlled, the future created or at least predicted" (p. 102). Not all science fiction fans and authors were enamored by Fort. Isaac Asimov called the book *Lo* "an incoherent mass of quotations from newspapers out of which ridiculous conclusions were drawn." Buhs quotes a fan, writing in *Astounding* in 1934, that "only the hyper credulous could read with enjoyment such a confused muddle" (p. 130).

Ray Palmer became the editor of *Amazing Stories*, another major science fiction magazine of the time, in 1938. After the end of WWII, he "arranged Forteanism, Theosophy, and conspiratorial theorizing into what was then [and would be for years] science fiction's most influential cause célèbres, the so-called Shaver Mystery" (p. 125). The mystery concerned whether stories in *Amazing* by Richard Shaver about aliens who lived inside a hollow earth and controlled humanity were fiction or not. While Palmer was touting Shaver at *Amazing Stories*, John Campbell at *Astounding* was pushing L. Ron Hubbard's *Dianetics* as a replacement for stories based on Fort's ideas, saying, "I firmly believe this technique can cure cancer" (p. 132). As the 1950s wore on, Forteanism in science fiction waned but survived in new venues. Magazines such as *Fate*, of which Ray Palmer was one of the founders, reported anomalous events. Ivan Sanderson, long a Fortean, sought to bring a more scientific façade to the study of animal anomalies and invented the term *cryptozoology*.

Thus, Fort's disorganized "incoherent mass" evolved into explicit fiction and then morphed back into better written and supposedly nonfiction reports in the works of Sanderson, Vincent Gaddis, and Edwards. Interestingly, Buhs does not mention Edwards although he was following in the footsteps of Fort. Nor did Edwards acknowledge Fort in his books.

Chapter four covers a different area of intellectual activity where Fort had an influence—what Buhs calls the "experimentally artistic." Several famous writers were influenced by Fort, including Henry Miller, Malcolm Lowry, Ben Hecht, and William Gaddis (no relation, apparently, to Vincent). The poets "involved in the San Francisco Renaissance used Fort's writings to outline society's structures … to resist modern institutions, to create autonomous spaces" (p. 154). Architects R. Buckminster Fuller and Frank Lloyd Wright were members of the Fortean Society.

Chapter five examines the influence that Fort had, years after his death, on what I have termed the *UFO culture*. Fort would have been ecstatic to learn of Kenneth Arnold's 1947 flying saucer sighting. This, and succeeding saucer reports, were just the sort of anomaly he lived for. Somewhat surprisingly, the flying saucer reports "fractured the Fortean community" (p. 205); as some Forteans "did not restrict their … explanations [of flying saucers] to strict Forteanism but mixed it with fundamentalism, New Agery, and conspiracism" (p. 205). Other Forteans believed that UFOs could be "creatures that swam in the ether" (p. 221) of outer space. Thayer felt that flying saucers might be a conspiracy but not the kind of cover-up conspiracy to hide the existence of extraterrestrials. There was an even deeper conspiracy in which there were no extraterrestrials, space fish, or whatever, but where the government itself produced false flying saucer reports to discredit Forteanism.

John Keel (1930–2009), an influential UFO proponent in the latter part of the twentieth century, "would always be a Fortean, but on UFOs, John Keel decided, Charles Fort was wrong" (p. 248). Rather than being created by terrestrial conspiracies, or just plain old extraterrestrials, UFOs were "ultra-terrestrials" from the "upper frequencies of the electromagnetic spectrum" (p. 249)—whatever that was supposed to mean.

Buhs brings the history of Fort's influences up to the present in the final chapter. Thayer died in 1959 and with him the Fortean Society and *Doubt*, the magazine he edited. But "Forteans did not disappear. They gathered, young and old, created new organizations, produced new magazines and movies and TV shows and, in time, websites" (p. 273). These productions "tried to transform the fantastical and the science fictional into the true" (p. 278). At the present time, we are beset with many modern-day conspiracy theories. "Fort and Forteans played their part in the creation of this world; they are not blameless. They eroded the distinctions between truth and falsity, undermined the authority of experts and expertise" (p. 288).

Buhs's excellent book reveals Fort as the important purveyor of nonsense that he, and his followers, were and still are. It traces his footsteps through places that I suspect most readers of this journal, like me, were unaware that he trod. The book is extremely well referenced—there are 246 notes for chapter one, which has only forty-eight pages! There is also a comprehensive bibliography that shows the impressive number of archival sources Buhs examined in the writing of the book. ■

Terence Hines is professor of psychology at Pace University and author of *Pseudoscience and the Paranormal*. He is a CSI fellow.

Skeptical Inquirer
THE MAGAZINE FOR SCIENCE AND REASON
SCIENCE OVER PARTY
FIVE TIPS FOR THE LEFT AND RIGHT
TIMOTHY J. REDMOND
Is Science Progressive or Conservative?
What Is Semi-Fake News?

Science over Party

Timothy Redmond's article "Science over Party" (SI, November/December 2024) provides a helpful perspective when science is in the political war zone, but it could be more discerning about the place scientists occupy within that landscape. Science is a method for generating knowledge. This is the basis for its authority. When confronted with insufficiently understood phenomena (e.g., as occurred early during the COVID-19 pandemic) science can provide progressively more certain knowledge about the problem and potential responses. Scientists can make powerful contributions to public discourse. This also defines the domain of their authority. Beyond adding knowledge, science does not afford a special role in policy choices. Values, risk tolerances, and preferences factor into the appeal of policies. As members of the community, scientists have a voice on policy, but it is that of any citizen. Science itself is jeopardized if scientists are seen as trying to assert special authority over policy. But scientists do not control the way science is used in the political arena. Partisans grab elements of scientific reports and overgeneralize findings to support their preferred outcomes. In trying to reconcile advocates' claims with the underlying science, one faces both the challenge of limitations in the body of knowledge and the risk of being seen as using science as a political adversary would. It is a narrow path to walk.

Martin M. Greller
Laramie, Wyoming

It was with some dismay that I read the article in your November/December 2024 issue, "Science over Party: Five Tips for the Left and Right." Certainly, the main premise is sound—that anyone can fall prey to politically motivated scientific bias—and the premise is backed up by sound data. Where the article falls short is that it implies an attitude all too prevalent in the media: bothsidesism. The issue simply is not equal on both sides, either in breadth or in impact. Those on the Right are far more likely to have anti-science views. By all means call out the deplorable state of science education in our country. And it is wise for everyone to examine their prejudices with respect to science. But please don't pretend that this is an issue affecting both sides equally.

Seth Bradley
Oregon

Timothy Redmond responds:

Thank you, Seth Bradley, you raise a very important point. However, I don't think that my line of reasoning exhibited the false balance, or bothsidesism, bias. In my article, I simply argued that some Democrats and some Republicans reject certain scientific claims, full stop. I didn't mean to suggest, or imply, that members of both parties do so equally. I suppose that the survey data included in my article could indicate that broadly speaking Republicans are more "anti-science" than Democrats because the partisan gap on the issues where Democrats follow the science is greater than the partisan gap on issues where Republicans follow the science. Nevertheless, I'm not sure that I share your conviction that the anti-science views of Republicans are greater "in breadth" and "in impact" than the anti-science views of Democrats. To determine whether one political party holds more anti-science views than the other, we would have to add up all the anti-science views that are more prevalent among Democrats, such as GMOs are harmful, nuclear power is too dangerous, astrology is meaningful, homeopathy is effective, and ghosts are real and all the anti-science views that are more widespread among Republicans, such as COVID-19 vaccines are harmful, climate change is a hoax, evolution didn't happen, prayers can heal, and Satan is the source of evil—and see which party is the greatest offender. To my knowledge, such an exhaustive list has never been compiled. What's more, this reckoning wouldn't necessarily demonstrate that one party is more anti-scientific than the other. As you astutely point out, not all anti-scientific views are created equal. One's belief that ghosts are real isn't nearly as consequential as another's belief that climate change is not real. Therefore, we would have to determine the costs associated with each anti-scientific view and tabulate those as well. But is such an endeavor even possible? Could we calculate the number of lives lost due to the denial of climate change (more common in Republicans) and compare it to the number of lives lost due to the denial of the safety of golden rice and genetically modified corn (more common in Democrats)? Perhaps. But how could we ever hope to calculate the costs associated with various counterfactuals? For instance, how many of the lives that have been lost (and will be lost) to climate change could have been saved if Democrats had not opposed nuclear power for over half a century? In short, I'm not sure we have enough evidence to determine whether Democrats are more likely, less likely, or equally likely to reject scientific claims as Republicans. However, I do believe that we would all be better served if members of both parties deferred to the expert consensus on matters of scientific import and that politicizing the matter only undermines our ability to achieve that end.

My Ouija Board Worked

The article "How Does the Ouija Board Work" by Stuart Vyse (SI, November/December 2024) reminded me of an odd occurrence over sixty years ago that has always puzzled me. As a senior in high school, I went to a slumber party with friends. As the evening wore on, a Ouija board was brought out, and we all began asking it questions about our futures. It was a game to us, just asking questions. None of us had ever heard of Spiritualism. I was engaged at the time to a guy named Bob, so I asked the Ouija board who I was going to marry. Strangely, the pointer did seem to move on its own, and it began spelling D … A … V … At that point, we all laughed, and I stopped because of course I was going to marry Bob. Five years later, I broke the engagement to Bob. I went to study in England, saw the man I was going to marry "across a crowded room" (really!), and he saw me. We fell madly in love instantly (it does happen!) before I even knew his name: David. It's been fifty-seven great years, and we still talk about the way we met. We are both scientists with a firm grasp of reality yet neither of us can believe it.

Noelle Soren
Tucson, Arizona

Stuart Vyse responds:

What a wonderful story. I have several reactions. First, asking the Ouija board who you are going to marry when you are already engaged seems like a rather daring act of tempting fate. I wonder if the cracks in Bob's armor (or amour) started there. As for D-A-Vid, it is a very common name. According to the Social Security Administration, for the century 1924 to 2023, David was the fifth most popular given name to males in the United States. By comparison, Noelle does not appear on the top 100 list of female names (www.ssa.gov/oact/babynames/decades/century.html). Based on this data, there were only four other male names (James, Michael, Robert, or John) that your man across the room was more likely to have. The real coincidence would have been if David asked the Ouija board and the answer had been N-O-E-L-L-E. In addition, it is just this kind of coincidence that is likely to be remembered and repeated over fifty-seven years of marriage. I suspect you remember little else the Ouija board said at that slumber party. But it is still a wonderful story, and far be it for me to toss cold water on it. Married people often create a kind of mythology of their story, and there is some evidence that this sense of specialness provides tangible benefits. The couple's mythology is further strengthened when love strikes "at first sight." Yes, it does happen. A

SECRETS REVEALED

Mismatching Answer

David Kotkin
↳David Copperfield

Erik Weisz
↳Harry Houdini

Randall Zwinge
↳James Randi

Raymond Teller
↳Teller

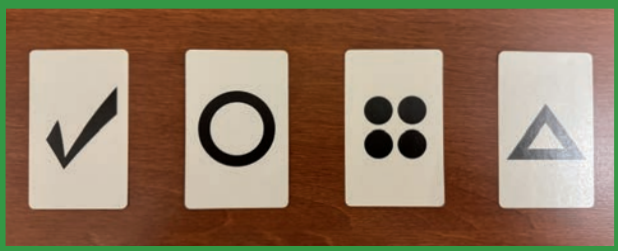
Steven Shaw
↳Banachek

Word Noodle Answer

CONJURE

Mind Reader Answer

Your card has been removed!



Note: Some of the cards in these photos were taken from J.B. Rhine's 1937 deck of "ESP cards" (also called "Zener cards"), and the other cards were taken from Kreskin's ESP 1967 game by Milton Bradley. This trick was adapted from one performed by Daniel Simons at the 2024 CSICon (see more about his presentation earlier in this issue: "We Saw the Brightest Stars Shine at CSICon 2024" by Stephen Hupp).

2007 study of Dutch couples found that 43 percent said they had fallen in love at first sight. Congratulations on your sighting.

The Cass Review

I thoroughly agree with the thoughts Robyn Blumner expresses in her article in the November/December 2024 issue. A child whose gender angst promotes a desire to change sex may (rarely I think) benefit from such a change. However, I think all such children require at least two years of evaluation by psychologists/psychiatrists who are knowledgeable in this topic, as well as endocrinologists and geneticists. There also needs to be clinical trials for these children. We need to know what the best course is. I agree with Blumner that there will be future lawsuits from adults who were rushed into sex changes as children.

Kenneth Deaton, MD
Macon, Georgia

I found the Blumner article in the November/December 2024 issue one-sided if not guilty of cherry picking. I would suggest that readers also look at Yale's Integrity Project critique, titled "An Evidence-Based Critique of 'The Cass Review' on Gender-affirming Care for Adolescent Gender Dysphoria" (by Meredithe McNamara and colleagues). It points out the shortcomings of the Cass Review not considered by Blumner.

Richard Hansis
Arcata, California

Robyn Blumner responds:

In response to Richard Hansis, I recommend Jesse Singal's thorough analysis of the Yale Integrity Project's Cass Review critique ("Yale's 'Integrity Project' Is Spreading Misinformation about the Cass Review and Youth Gender Medicine"). Singal's rebuttal is posted in multiple parts because it's so detailed and empirical. Singal writes that the Yale Integrity Project's response to the Cass Review "is an exceptionally misleading, confused, and fundamentally unprofessional document. The authors make objectively false claims about the content of the Cass Review, badly misrepresent the present state of the evidence for youth gender medicine, and, just as alarmingly, exhibit a complete lack of familiarity with the basic precepts and purposes of evidence-based medicine." Readers of Singal's analysis will find that it effectively discredits the Yale effort and reinforces the validity and accuracy of the Cass Review.

So-Called Alternative Medicine

In "The Harm of So-Called Alternative Medicine" (SI, November/December 2024), Edzard Ernst highlighted the lesser-known dangers to utilizing alternative medicine. Even with its personal, financial, and environmental risks, alternative medicine remains a profitable industry. Operating under the assumption that proponents of alternative medicine have been wrongly misguided, I implore science communicators to disclose these findings on platforms utilized most by young people. Adolescents and young adults are highly susceptible to the media they consume. Unfortunately, few content creators promote facts when pushing the latest wellness trends, and as a young person, I have fallen victim to the media frenzy surrounding wellness. To maximize the value of this skeptical work is to share it with the people who need it most, making it crucial to share this knowledge on platforms dominated by young people.

Katherine Hildebrand
Camp Point, Illinois

Send in a Letter to the Editor

Letters to the Editor are for views on matters raised in previous issues. Letters should be no more than 225 words. Due to the volume of letters received, not all can be published. Those selected may be edited for space and clarity. Authors criticized in the Letters column may be given the opportunity to respond in the same issue. Submit Letters to the Editor by email text (not attachment) to letters@skepticalinquirer.org. In the subject line, provide your surname and informative identification, e.g., "Smith letter on Jones evolution article." Include your name and location (City, State) at the end of the letter.

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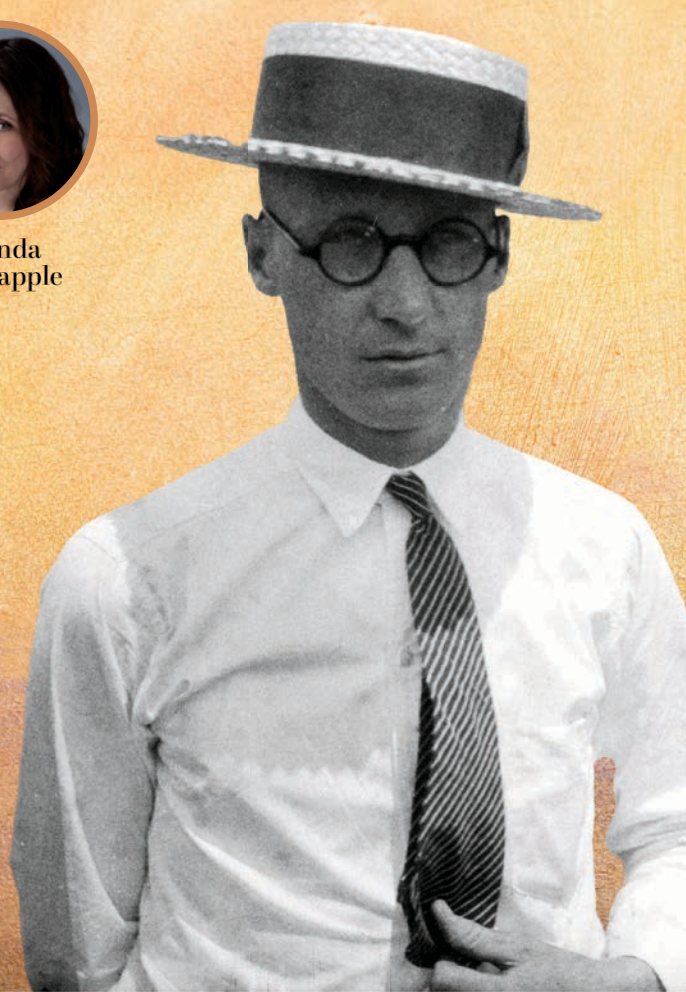

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